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MONTHLY REPORT

OF

THE AGRICULTURAL DEPARTMENT.

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# MONTHLY REPORT.

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DEPARTMENT OF AGRICULTURE,  
*January, 1867.*

This number of the monthly report contains carefully compiled and valuable statistics upon a subject of vital importance in this or any other country—the rate of wages of farm labor. It is based on full returns from every State and nearly every Territory in the United States, and from nearly every county in many of the States. It has been a work of no small magnitude, accomplished with evident care and laborious research, and must be credited with a high degree of accuracy in its conclusions. It shows that the average rate of wages for farm laborers who board themselves, in the northern and western States, is \$28 00 per month, or \$15 50 when boarded; in the southern States, for freedmen, \$16 00 per month, or \$9 75 with board. An increase of seventy per cent. since 1835, is indicated.

A statement of the present average annual requirement of wool for consumption will be found to embody careful estimates of the native yield, and the foreign supply, both manufactured and unmanufactured. It will also serve to correct popular misapprehension of the present ability of this country to furnish its own wool supplies, without the necessity of any extensive importations of wool for the future, if this branch of industry should not be crushed out by discriminations in favor of foreign-grown wool.

Interesting statistics of the agriculture of the kingdom of Great Britain, from recent official statements, are also given, not only for the information of the people, but to show the steadily increasing prominence which civilized nations are giving to the subject of industrial statistics.

A variety of statistical presentations upon various subjects, will also be found in this number.

Particular attention is called to the circular, in accordance with a resolution of Congress, calling for specimens of cereals for the Paris exposition.

ISAAC NEWTON,  
*Commissioner.*

## THE RATE OF WAGES OF FARM LABORERS IN THE UNITED STATES.

In a single hundred years a change has been wrought in this country which may well challenge the admiration of the civilized world, and all that has been accomplished is the direct result of labor, and of that labor, the largest portion, if not the most productive of net profits, is the labor of agriculture.

Only one branch of agricultural industry is to be considered at this time. Farm workers are here farm proprietors. Scarcely more than one-fourth of those who obtain their living by agriculture, in this country, hire out their service to farmers for a monthly or other consideration. It is of this class that a systematic course of inquiry in every State and Territory has been made, and it is, as is believed, the first attempt of the kind ever made here.

The result shows an increase of the rates of wages in five years amounting to about fifty per cent. This is less than the increase of the cost of living; still the purchasing power of a month's wages is probably greater than in any other country in the world. Farm laborers, especially in the west, can enjoy more of the comforts of life, and attain a higher rank in the social scale, than those of any other country. They do not obtain the wages conceded to mechanics and other classes, perhaps better entitled to be considered skilled laborers, yet they enjoy an advantage, which is a partial compensation, in lower rents and cheaper subsistence supplies, and fewer temptations to extravagance and waste.

In view of the superior condition of the class, in comparison with rural laborers in other countries, it is not strange that the European peasant should covet such advantages, and seek them even at the expense of exile from the fatherland.

*Immigration.*—It is a suggestive fact that the immigration of millions of foreigners has not, as native laborers once feared, proved a serious competition, reducing the rate of wages. On the contrary, it has advanced great public works which have opened new and wider fields of industry, and has pushed the native laborer into the artisan ranks and the sphere of skilled labor, with higher wages, more exercise of mind, and less of muscle than before. When it is remembered that in 1860 there were 4,136,175 foreign residents, and at least 5,000,000 at the present time, or one-seventh of the population, and a still larger proportion of the actual labor of the country, this result must be acknowledged to be convincing evidence of the great resources and vast power of labor absorption possessed by the United States.

*Increase of rate of wages.*—More than thirty years ago Mr. H. C. Carey made the following estimate of the average of agricultural labor in this country: "Agricultural labor has not varied materially in these forty years in its money price; but the variation that has taken place has been in its favor—the wages of men having been very steadily about nine dollars per month and their board; but higher wages are now not very unusual." The average for white labor at the present time, as presented in the accompanying tables, is fairly stated at \$28 per month, or nearly \$15 50 and board. This indicates an advance of seventy per cent. in the lapse of a generation, mostly in the last six years, or fifty per cent. since 1861.

*Table showing the average rate of wages of agricultural labor per month, when employed for the year, from returns from statistical correspondents, county clerks, and county auditors, made in December, 1866.*

States and Territories.	Per month, for the year, (without board.)	Per month, for the year, (with board.)	Per month, for the season, (without board.)	Per month, for the season, (with board.)
Maine .....	\$27 00	\$17 44	\$31 76	\$23 07
New Hampshire .....	32 74	22 48	39 12	28 43
Vermont .....	32 84	21 00	37 44	25 72
Massachusetts .....	38 94	22 36	41 61	27 83
Rhode Island .....	34 40	20 50	40 00	26 33
Connecticut .....	34 25	21 54	39 66	28 30
New York .....	29 57	19 32	34 88	24 26
New Jersey .....	32 27	18 98	33 13	23 78
Pennsylvania .....	29 91	18 84	34 10	22 87
Delaware .....	24 93	13 25	26 25	15 25
Maryland .....	20 36	12 76	23 83	15 58
Virginia .....	14 82	9 36	17 21	12 09
North Carolina .....	13 46	8 15	15 18	10 00
South Carolina .....	12 00	7 66	14 00	9 46
Georgia .....	15 51	9 67	18 45	12 07
Florida .....	18 00	12 12	20 55	14 43
Alabama .....	13 40	9 80	16 38	11 00
Mississippi .....	16 72	11 58	22 58	16 80
Louisiana .....	20 50	12 42	22 25	18 34
Texas .....	19 00	12 72	23 73	16 76
Arkansas .....	24 21	15 80	29 61	19 46
Tennessee .....	19 00	12 58	22 60	16 61
West Virginia .....	25 35	16 47	29 34	21 20
Kentucky .....	20 23	13 65	23 80	17 06
Missouri .....	26 75	18 08	30 84	21 66
Illinois .....	28 54	18 72	33 09	23 30
Indiana .....	27 71	18 72	31 50	22 50
Ohio .....	28 46	18 96	32 45	23 15
Michigan .....	31 26	20 48	34 95	24 15
Wisconsin .....	30 84	19 87	35 65	24 60
Minnesota .....	31 65	21 10	38 40	27 17
Iowa .....	28 34	18 87	33 24	23 82
Kansas .....	31 03	19 81	36 40	25 46
Nebraska Territory .....	38 37	24 64	46 42	31 36
Utah Territory .....	44 71	26 32	58 22	38 41
Colorado Territory .....	67 50	42 12	79 16	50 00
New Mexico .....	25 00	16 50	30 00	25 00
California .....	45 71	30 35	50 00	34 39
Nevada .....	75 00	60 00	85 00	70 00
Washington Territory .....	52 25	36 25	60 50	44 50
Dakota .....	30 20	20 00	32 00	22 00
Oregon .....	35 75	22 53	41 60	29 00

*Accuracy of the statement.*—The returns from which this table is prepared were remarkably full, numerous, and satisfactory. It was deemed best not to load the circular with too many inquiries, or those difficult of prompt and universal answer. It embraced fifteen separate inquiries relative to farm labor, by hand or machine. A deep interest in the subject, with a proper appreciation of its importance, was manifested by correspondents, who replied with promptness and intelligence, after consultation with the best judgments in their vicinity. In a very few cases where any misunderstanding of a single point apparently existed, the difficulty was cleared up by correspondence. The extent and com-



pleteness of the work may be inferred from the number of returns, mostly representing counties, though occasionally subdivisions of counties; and each one of these returns compiled in accordance with the combined judgment of several local correspondents, or other individuals. Ohio, for instance, is represented by 114 returns; Indiana by 110; Illinois by 103; Iowa by 104; New York by 109; Pennsylvania by 75; smaller States by a less number; in all, 1,510 formal statements, each made up of several others, usually representing a defined territory or district.

As an example of uniformity in a populous, central, prosperous belt, interlaced with railroads and traversed or skirted with navigable water, let the reader note the figures for the States on the fortieth parallel. The monthly rate of wages, without board, is placed at \$29 91 in Pennsylvania, \$28 46 in Ohio, \$27 71 in Indiana, \$28 54 in Illinois, \$28 34 in Iowa. The east is subject to a somewhat higher cost of living, while in the west the scarcity of labor has the same tendency to advance prices. This scarcity in Nebraska pushes the rate to \$38 37. The rate of wages, with board, is still more uniform: Pennsylvania, \$18 84; Ohio, \$18 96; Indiana, \$18 72; Illinois, \$18 72; Iowa, \$18 87; showing an entire range of variation in the net price of labor of only twenty-four cents!

Very general returns were received from the southern States, yet fewer than from the northern. These States rest under the disadvantage of a disturbed condition of labor relations, resulting from the war and the manumission of slaves. Assuming as a truth the proposition of Mr. Amasa Walker, that involuntary servitude is not labor, it might be declared that labor in the south has scarcely progressed beyond the period of helpless infancy. Low rates of wages are, therefore, returned from this section. The multiplicity of modes of contracting for service of freedmen, involving, in some cases, semi-partnerships or shares in the products of labor, and in others total or partial supplies of food or implements of labor, renders it difficult to report with accuracy its actual market value. Yet, the result of the inquiry has been, upon the whole, quite satisfactory.

The average rate of wages, viz., \$28 for labor of whites, and \$16 per month for that of freedmen, was obtained by careful and laborious calculation. First, the average monthly wages in a State was multiplied by the number of farm laborers in such State, and so with each member of the Union. Then the sum of the aggregate monthly wages was divided by the aggregate number of laborers, giving as a quotient the proper average monthly pay of the farm laborer. An average of the several State averages, it will readily be seen, would by no means answer the purpose of approximate accuracy, as such a mode of *miscalculation* would give to a State with few laborers as much influence as one with many.

*Causes and results of high rates.*—In those States in which regular labor is most general among the inhabitants, and where it is prosecuted in greatest variety, there will wealth abound and prosperity be most generally enjoyed. And another fact relative to such States will also be noted—their laborers receive the highest rate of wages.

Massachusetts has a poor soil, and cannot be considered a farming State. In 1860 the United States census returned 45,204 farmers, and 17,430 farm laborers, while the total return of all occupations was 454,632. The State census of 1865 makes the number engaged in agricultural pursuits 68,636, and those employed in manufacturing 271,241. The employment of all this labor in commerce, in fisheries, in manufactures, in the mechanic arts, and in trade, requires a consumption of farm products far greater than the home supply. This enables farmers to select those branches of their business most profitable under the circumstances, and least affected by foreign competition, as the milk trade, the fruit supply, and production of perishable vegetables. The facility of obtaining employment in other occupations gives the farm laborer a material advantage, and



enforces his demand for higher rates of labor. The result is, at the present time, higher monthly pay than any other State in the Union, except California, viz: \$38 94 per month for farm labor, without board. And while the necessities of life are also high, there is no State in which the agricultural laborer enjoys the comforts of life to a greater extent, or is better fitted to act a creditable part in his sphere in society.

The advantages of great variety in industry are manifold, one of the highest of which is the fact that all classes and capacities, young and old, male and female, are furnished with something to do, and with a motive for doing it, and thus labor in some form becomes the rule, to which there are few exceptions. Consumers and producers are at each other's doors, or commingled in the same household, and carriers and go-betweens absorb but a small portion of the profits of industry. There is no glut of the markets from excess of production or the deficiency or great expense of transportation. There is no occasion to sell corn for ten cents per bushel, or eggs at six cents per dozen, or cattle, as in Texas, at five dollars per head.

It is fashionable in communities with but one prominent industry to decry the promoters of these industrial enterprises as monopolists and heartless oppressors. Thirty-eight dollars per month for farm labor, and twenty to thirty for light employments of females, are sufficient answers to such ill-natured charges. Tidy and well-furnished houses, and evidence of refinement in humble life, are not the concomitants of the oppression and tyranny of capital. These same communities must adopt the same variety in industry which they might have done and should have done many years ago, or the compulsive idleness and resultant poverty of large masses of their people will continue, and become intensified and chronic, until their whinings over the prosperity of more industrious communities shall become an envious wail of misery.

This path of progress has been equally open to all; laws supposed to favor a diversified industry have been applicable to all States alike; the best water-power and the cheapest coal are in States that make no extensive use of either; milder climates and superior facilities for cheap transportation have furnished advantages that have not been transmuted into net profits; and yet such communities, daily inflicting irreparable injury upon themselves, by neglecting the gifts of God and spurning the labor of man, are wont to deem themselves injured by the prosperity flowing from superior industry and a practical political economy.

Will States that are almost deserts from a suicidal policy of growing agricultural products for exportation, and importing everything, learn wisdom from poverty, and grow prosperous and wealthy, with laboring classes comfortable and intelligent, and advancing in moral and mental culture?

The rate of wages in the several States differs just in proportion to the multiplication of separate industries, modified in new States in process of settlement by the increased demand for consumption occasioned temporarily by incoming settlers who are as yet non-producers, or in the mining States and Territories by the employment of the majority in mining. The following is a table of average wages per month of farm laborers employed for the year, in the different sections of the country:

Eastern States .....	\$33 30
Middle States .....	30 07
Western States .....	28 91
Southern States .....	16 00
Oregon .....	35 75
California .....	45 71

One cause of high rates of labor in this country is the superior intelligence and activity of the laborers. Nowhere else is so much agricultural labor done

by machinery requiring skill and knowledge in its management, and accomplishing marvellous results in its swift and efficient action. An English writer on political economy recognized this element of increase in labor rates when he said: "The average annual wages in England are three times as high as in Ireland; but as the laborer in Ireland is said not to do more than one-third of what is done by the laborer in England, the price of labor may in both countries be about equal." There is a tendency to a just equilibrium in the labor markets as in all other markets; and if laborers by superior skill and celerity of movement may do double work, they will obtain, other things being equal, a double price. Agricultural machinery has done more in this country than anything else towards the elevation of labor.

#### LOCAL VARIATION OF RATES.

The "Panhandle" of West Virginia is a notable example of high local rates of wages, as compared with the State average. Its circumstances have been peculiar. Hemmed in between Ohio and Pennsylvania, and with fair facilities for getting to market, it has developed higher skill and a better style of farming than other sections of the State. The influence of slave labor in depressing rates of wages has aided in widening this difference and reducing the State average below that of the Panhandle. Sheep husbandry, which has here been successfully and very extensively conducted, (placing a sheep upon each acre of improved land,) has contributed to the high prices here prevailing. The comparison is as follows:

	Question 1.*	Question 2.	Question 3.	Question 4.
Panhandle.....	\$31 75	\$18 50	\$37 00	\$25 50
State of West Virginia .....	25 35	16 47	29 34	21 20

The rates with and without board also differ widely—\$13 25 and \$8 88.

*Dairying.*—The dairy and fruit producing interests of northern Ohio have been of late unusually prosperous. Labor has been in demand at comparatively high rates, as will be seen from a comparison of the averages for the western reserve, the Miami valley, and the entire State:

	Question 1.*	Question 2.	Question 3.	Question 4.
Western reserve.....	\$30 43	\$20 72	\$36 24	\$26 22
Miami valley .....	28 79	18 75	32 71	23 08
State of Ohio.....	28 46	18 96	32 45	23 15

The difference in wages with board is not very material. The board allowance is slightly greater in the western reserve than the average for the State, and more for the "season" than for the entire year. The reverse is true of the Miami valley.

\* Question 1. Average wages per month (without board) of farm laborers hired for the year. Question 2. Average wages per month (with board) of farm laborers hired for the year. Question 3. Average wages per month (without board) of farm laborers hired for the season or a portion of the year. Question 4. Average wages per month (with board) of farm laborers hired for the season or a portion of the year.

*Wages in Indiana.*—The average rate of wages of Indiana, south of thirty-nine degrees north latitude, and the average for the whole State, are as follows:

	Question 1.*	Question 2.	Question 3.	Question 4.
Southern Indiana.....	\$26 25	\$18 56	\$29 24	\$21 77
State of Indiana.....	27 71	18 72	31 50	22 50

The average differences in board allowances are respectively \$7 61 and \$8 99.

This average for southern Indiana, a region having in the past a reputation for comparative inferiority in agricultural improvements, indicates increasing skill in farm processes, and general industrial progress, and shows a close approximation to the average of the entire State.

*Southern Illinois.*—Southern Illinois, too, with its rolling surface covered with forests, and less desirable soils than those of the northern prairies, has failed to secure hitherto so rapid settlement, or such an increment of improvement. Yet this region has its peculiar advantages, which have recently been seized upon by eager immigrants; and the results have been eminently satisfactory.

The following exhibit of wages is shown:

	Question 1.*	Question 2.	Question 3.	Question 4.
Southern Illinois.....	\$26 06	\$16 83	\$30 36	\$21 41
State of Illinois.....	28 54	18 72	33 09	23 30

*Nearness to cities.*—The influence of diversification of industry, and the consequent withdrawal of labor from farms to manufactures and trade, increasing the price of farm labor, as well as of farm products, is shown in the average for St. Clair county, opposite St. Louis.

	Question 1.*	Question 2.	Question 3.	Question 4.
St. Clair county.....	\$40 00	\$20 00	\$50 00.	\$35 00

Omitting from the table the vicinity of St. Louis, the showing for southern Illinois is as follows:

	Question 1.*	Question 2.	Question 3.	Question 4.
Southern Illinois.....	\$24 83	\$16 62	\$28 85	\$20 06

*Easy transportation and skilled labor.*—The advantage of facilities for transportation are shown by the increased rates of wages near navigable rivers and

\* Question 1. Average wages per month (without board) of farm laborers hired for the year. Question 2. Average wages per month (with board) of farm laborers hired for the year. Question 3. Average wages per month (without board) of farm laborers hired for the season or a portion of the year. Question 4. Average wages per month (with board) of farm laborers hired for the season or a portion of the year.

lines of railroad. This is conspicuously seen in a comparison of the river counties of Kentucky with those of other portions of the State. Other elements of difference appear in a comparison of the river counties of the Kentucky side with those of the Ohio shore. A more diversified industry in Ohio, and the employment of free instead of slave labor, enter into the calculation and make a material advance in the rate. The following table exhibits nearly as great a difference between the river counties of Ohio and those of Kentucky as exists between the latter and those of the entire State :

	Question 1. *	Question 2.	Question 3.	Question 4.
State of Kentucky.....	\$20 23	\$13 65	\$23 80	\$17 06
River counties, Kentucky.....	24 23	16 36	23 79	20 36
River counties, Ohio.....	28 27	17 36	32 81	22 33

*Free labor influence.*—The influence of changing the system of labor in a State from slave to free is illustrated very conspicuously in the belt of States from Virginia to Missouri. Virginia has been divided for several years, and that portion west of the mountains, formerly in comparative discredit as an agricultural region, shows a much higher rate of wages than Virginia proper. Slave labor, for several years, has scarcely been known in a large portion of Missouri. The following is a showing of the rate of wages for these States :

	Question 1. *	Question 2.	Question 3.	Question 4.
Virginia.....	\$14 82	\$9 36	\$17 21	\$12 09
West Virginia.....	25 35	16 47	29 34	21 20
Kentucky.....	20 23	13 65	23 80	17 06
Missouri.....	26 75	18 03	30 84	21 56

#### BOARD OF FARM LABORERS.

The difference between wages without board and the rate allowed when board is furnished by the employer is naturally found to vary quite regularly with the cost of food products, the rate being higher in the east than in the west, and higher still in the territories of the Rocky mountains, but less in California than in Massachusetts. In the south the board of freedmen, consisting mainly of corn meal and bacon, is of course very low. Possibly in Alabama the difference between labor with and without board may be too small. The mode of hiring and supplying these laborers varies so much with circumstances that our correspondents found it difficult to reduce their information to the system required.

The following is a statement of these differences in monthly pay on account of board, averaging \$6 26 in the southern States, and \$12 51 for the other States :

Maine.....	\$9 56	New York.....	\$10 25
New Hampshire.....	10 76	New Jersey.....	13 29
Vermont.....	11 84	Pennsylvania.....	11 07
Massachusetts.....	16 58	Delaware.....	11 68
Rhode Island.....	13 90	Maryland.....	7 60
Connecticut.....	12 71	Virginia.....	5 46

\* Question 1. Average wages per month (without board) of farm laborers hired for the year. Question 2. Average wages per month (with board) of farm laborers hired for the year. Question 3. Average wages per month (without board) of farm laborers hired for the season or a portion of the year. Question 4. Average wages per month (with board) of farm laborers hired for the season or a portion of the year.



North Carolina.....	\$5 31	Ohio.....	\$9 50
South Carolina.....	4 34	Michigan.....	10 78
Georgia.....	5 84	Wisconsin.....	10 97
Florida.....	5 88	Minnesota.....	10 55
Alabama.....	3 60	Iowa.....	9 47
Mississippi.....	5 14	Kansas.....	11 22
Louisiana.....	8 08	Nebraska Territory.....	13 73
Texas.....	6 28	Utah Territory.....	18 39
Arkansas.....	8 41	Colorado Territory.....	25 38
Tennessee.....	6 42	New Mexico Territory.....	8 50
West Virginia.....	8 88	California.....	15 36
Kentucky.....	6 58	Nevada.....	15 00
Missouri.....	8 67	Washington Territory.....	20 00
Illinois.....	9 82	Dakota Territory.....	10 20
Indiana.....	8 99	Oregon.....	13 22

The average, as above, for white laborers, is \$12 51 per month; in the south, with reference mainly to freedmen, \$6 26.

Table showing the rate of wages of agricultural labor, per day, in transient service, from returns from statistical correspondents, county clerks, and county auditors, made in December, 1866.

States.	Per day, for transient service in harvest, (without board.)	Per day, for transient service in harvest, (with board.)	Per day, for transient service other than in harvest, (without board.)	Per day, for transient service other than in harvest, (with board.)
Maine .....	\$2 02	\$1 56	\$1 49	\$1 13
New Hampshire.....	1 93	1 52	1 67	1 26
Vermont .....	2 32	1 85	1 76	1 32
Massachusetts.....	2 41	1 92	1 83	1 38
Rhode Island.....	2 23	1 71	1 83	1 33
Connecticut.....	2 43	1 90	1 75	1 29
New York.....	2 41	1 92	1 75	1 23
New Jersey.....	2 68	2 38	1 68	1 20
Pennsylvania .....	2 32	1 80	1 59	1 10
Delaware.....	2 09	1 62	1 31	94
Maryland.....	2 00	1 68	1 31	96
Virginia.....	1 46	1 21	82	57
North Carolina.....	1 53	1 17	72	50
South Carolina.....	1 25	93	69	45
Georgia.....	1 48	1 06	99	70
Florida.....	1 12	83	1 00	74
Alabama.....	1 27	1 04	78	55
Mississippi.....	1 65	1 14	1 34	89
Louisiana.....	1 66	1 20	1 08	70
Texas.....	1 65	1 32	1 31	98
Arkansas.....	2 07	1 52	1 34	88
Tennessee.....	2 01	1 54	1 15	83
West Virginia.....	1 78	1 31	1 31	92
Kentucky.....	2 10	1 70	1 21	86
Missouri.....	2 15	1 72	1 44	1 07
Illinois.....	2 41	1 91	1 62	1 21
Indiana.....	2 23	1 76	1 45	1 06
Ohio.....	2 20	1 73	1 54	1 13
Michigan.....	2 62	2 14	1 78	1 30
Wisconsin.....	2 68	2 15	1 78	1 28
Minnesota.....	2 68	2 27	1 75	1 35
Iowa.....	2 38	1 83	1 62	1 19
Kansas.....	2 31	1 82	1 65	1 19
Nebraska Territory .....	2 65	2 15	1 93	1 43
Utah Territory.....	3 42	2 49	2 27	1 63
Colorado Territory.....	4 17	2 87	3 29	1 93
New Mexico Territory.....	1 50	1 12	1 00	90
California.....	2 56	2 06	2 26	1 72
Nevada.....	3 50	3 00	3 00	2 50
Washington Territory.....	3 00	2 25	2 25	1 75
Dakota Territory.....	2 50	2 00	2 00	1 50
Oregon.....	2 40	1 80	1 75	1 40

*Table showing the average prices of harvesting and stacking wheat and cutting and stacking hay.*

States.	Price per acre of harvesting and stacking wheat, including all the labor of men and horses.	Price per acre of cutting, curing, and stacking hay.	Price per acre of cutting hay only.
Maine.....	\$ 4 37	\$ 3 54	\$1 16
New Hampshire.....	5 75	3 77	1 33
Vermont.....	4 33	3 48	1 19
Massachusetts.....	4 72	5 19	1 75
Rhode Island.....	6 00	6 12	1 71
Connecticut.....	3 70	4 75	1 81
New York.....	3 88	3 28	1 11
New Jersey.....	4 36	4 04	1 52
Pennsylvania.....	4 36	4 10	1 33
Delaware.....	3 25	3 87	1 50
Maryland.....	4 21	4 83	1 57
Virginia.....	2 07	1 98	1 05
North Carolina.....	1 84	2 67	1 59
South Carolina.....	1 56	3 37	1 50
Georgia.....	2 41	2 82	1 81
Florida.....			
Alabama.....	2 17	3 66	1 75
Mississippi.....	2 66	3 31	1 50
Louisiana.....			
Texas.....	2 65	4 06	1 70
Arkansas.....	3 00	4 37	1 96
Tennessee.....	2 36	3 49	1 86
West Virginia.....	2 75	2 74	1 07
Kentucky.....	3 03	3 51	1 60
Missouri.....	3 59	3 25	1 12
Illinois.....	3 32	2 69	90
Indiana.....	3 33	3 09	1 07
Ohio.....	3 18	3 10	1 00
Michigan.....	3 41	3 14	1 09
Wisconsin.....	3 28	2 73	1 05
Minnesota.....	3 33	3 34	1 26
Iowa.....	2 95	2 58	81
Kansas.....	3 73	3 90	1 03
Nebraska Territory.....	4 28	3 53	98
Utah Territory.....	9 32	8 91	3 37
Colorado Territory.....	9 56	7 79	3 85
New Mexico Territory.....	6 50		
California.....	2 76	3 00	1 25
Nevada.....		8 00	3 00
Washington Territory.....	3 00	5 50	2 00
Dakota Territory.....	2 50	4 00	1 50
Oregon.....	3 75	3 00	94

The following questions were fully answered, but, owing to the great diversity in the mode and conditions of such operations, no average could fairly be drawn :

"10. Price, per bushel, of threshing and separating wheat?

"11. Price, per bushel, of threshing and separating oats?

"12. Price, per bushel, of husking and cribbing corn?

"13. Price, per bushel, of shelling corn?

"14. Price, per acre, of cutting and stacking hay?"

In some localities the machine and its manager only are furnished, at a low price per bushel; in others, additional men or horses; in others still, all labor,



board, or other expense. The prices, therefore, vary, as in Illinois for instance, from three to seventeen cents per bushel. And so in other States. The actual returns from Illinois would average  $8\frac{7}{8}$  cents; question 11th, average  $5\frac{1}{10}$  cents. In cutting and stacking hay, in Illinois, the returns ranged from \$1 50 to \$4 per acre.

The following extracts from correspondence will show further the impossibility of obtaining uniformity in returns relative to machine labor, and to some extent, freedmen's labor:

A Pennsylvania correspondent says of harvesting wheat: "Men are either hired by the day and furnished with horses and wagon, or receive a portion of the crops, (threshed,) to be agreed upon. In out-lots, adjoining towns, it is customary to get a neighboring farmer to do the work, and to deliver to the owner of the soil one-half the threshed grain. This includes ploughing and sowing, each party furnishing half the seed.

"As to your 12th question, men are hired by the day, and the corn is cribbed or otherwise disposed of at the expense of the owner. The shelling of corn is done by the farmers themselves, with such hired assistance as the mode of operation requires. Large lots are tramped out with horses. It is generally sold in the ear, however. Cutting, curing, and stacking hay is done for one-half the crop, the cropper finding all."

*Charleston, Kanawha county, West Virginia.*—"I have had some difficulty in getting the price per acre for harvesting—no two agreeing as to the exact price; for some machines require more labor than others, and no one, it appears, has kept regular account as to the real cost. I have, however, taken the medium. The greatest portion of this county is harvested by manual labor, except hauling."

*Ottawa county, Michigan.*—"The person owning the threshing machine charges six cents per bushel for wheat, and three cents for oats, but his employer furnishes about seven men and two teams in addition, which would make the whole cost as reported. In consequence of the lumbering business, labor is no cheaper for the whole year than for six or eight months in summer."

*Pineville, McDonald county, Missouri.*—"This county is just recovering from the effects of the war, and it would be impossible to give a correct list of prices and wages, or anything near it."

*Mt. Olive, North Carolina.*—"As to the price of harvesting and stacking wheat, husking and cribbing corn, shelling corn, &c., it is impossible for me to give an answer, as such work is never let out here."

*Thomasville, North Carolina.*—"There is no machinery used in this county for harvesting wheat. Corn is still husked by means of the old-fashioned 'husking,' called by us 'shucking,' when the neighbors in turn assist each other in husking their corn at night."

*Paris, Texas.*—"The harvest labor mentioned in the report is the old style of harvesting by hand; we having but few machines in the county, not more than one-tenth of our grain being harvested by machinery."

*Oceana, West Virginia.*—"We have no machines in this county for cutting wheat; hence I am unable to give a price, as it is always performed by day laborers with cradles."

*Cornersville, Giles county, Tennessee.*—"The answers to the wages of hands are given from actual contracts. It is proper to remark that it costs more to feed a white laborer than a black one. The whites require flour, sugar, coffee, &c., whereas the blacks, in the main, have their thirteen bushels meal and one hundred and eighty-seven and a half pounds bacon per hand, together with milk, potatoes, and vegetables, given to them for a year's allowance, and they do their own cooking. White men without families eat at our family table. Negroes are less in the way, and it don't cost as much to feed them. Whites are more reliable, have better judgment, and a higher regard for their obligations."

*Sanilac county, Michigan.*—"It is the universal custom here to board hired

men, so I have included board in the within estimate, except the price of threshing wheat and oats, which would double if board is to be included."

*Summit, Mississippi.*—"As in this State all agricultural pursuits are subordinate to the cultivation of cotton, but few of the questions are applicable to the system of agriculture in the cotton region. The planter regulates the area of land planted by the labor he can command for the whole year, and it is only in a wet spring or a productive season that extra labor is wanted. Should the spring be wet the cotton cannot be worked, and the grass will get such hold that extra labor is required or a portion of the crop has to be abandoned. In productive seasons it is often necessary to employ extra labor to pick the cotton. Except in one or the other of these contingencies, extra labor is rarely employed on a cotton farm. During the past season the cotton farms were worked but upon two principles: One to hire labor, and the prices then assimilated to those appended to the questions; the other to give the laborer a share of the crop. The apportionment of the laborer's interest depended much on his ability to labor, and the size of his family. Generally, where the landed proprietor furnishes the working stock and the plantation tools, and the laborer supports himself and family, they are equal partners in the crop. Where the proprietor furnishes the above and supports the laborer, the laborer gets from one-quarter to one-sixth of the crop, depending on his family. The experience of the last year is, that the freedman works well for a few months, but becomes restless and desires to change, and this season many have abandoned half a year's work and gone off without saying a word. I think there is a growing disposition on the part of freedmen to work on shares, and a large number of planters have abandoned the idea of working their places with hired labor, and will rent their places out. My own experience is, that the only way to benefit the freedman and make his labor available is to make him rely upon himself for his support."

*Madison county, Virginia.*—"In some instances it has been found difficult to ascertain the true cost of labor, owing to the diversity of contracts entered into with colored laborers; for instance, a man with a wife and three or four children, boarded and clothed, receives no additional pay, while others, with families of same size, would command, without clothes, from thirty dollars to sixty dollars per annum. It is believed, from present indications, that for the ensuing year but few, if any, colored laborers will enter into any sort of contract for a year, evincing a total aversion to regular work. Many of them are now busily engaged in building shanties, with a view to setting up for themselves, without a dollar to begin. In my estimate of cost for cutting, curing, and stacking hay the aid of machinery has not been taken into account; in shelling corn, however, it has been."

*Union county, South Carolina.*—"All laborers are included, from the best to those who are only able to earn their rations and clothing. Negroes constitute about nineteen-twentieths of the hired labor of the county."

#### COMPARISON WITH EUROPEAN LABOR.

The rates of labor in Europe are much less than in this country. Elaborate calculations by Professor Leone Levi make the total earnings of the laboring classes of Great Britain \$2,091,500,000 in all industries; in agriculture, \$375,000,000. The average income of a working man in England is \$5 62 per week; in Scotland, \$5 12; and in Ireland, \$3 58.

The agricultural laborer receives scarcely two-thirds as much as the general average. Mr. Levi does not give the average rate, but it can be readily approximated. In England \$1 75 to \$2 per week may be considered the lowest rate, while few farm laborers obtain more than \$4 or \$4 50. The former rate, with the bonus of "a little cider," is common in Devonshire; in South Shropshire, \$2 75, with additions equal to seventy-five cents more, or \$3 50 in all; in Dor-

setshire, \$2; in Durham and Northumberland, \$3 75, with house and garden, coal, potatoes, and wheat. It may not be very wide of the truth to estimate the present wages of the English farm laborer at \$3 50 per week. Allowing four weeks for holidays and absence from other causes, the year's earnings would be \$168. Wade's History of the Middle and Working Classes placed the average of husbandry wages at \$3, which was believed to be high at that time. Mr. Senior made the average of all kinds of labor \$168 per year in Britain, and \$224 in the United States. Farm labor then averaged less. This is not given as the actual average, but is probably quite as favorable to the laborer as it can truthfully be made.

The American farm laborer, as has been shown, gets \$28 dollars per month, or, counting eleven months' work each year, \$308 per annum. Although the pay is in currency, each dollar will buy more breadstuffs and vegetables in the great western agricultural sections than will a gold dollar in England.

Wages have materially increased of late. Mr. Levi estimates that one-half the laborers of the United Kingdom, from increase of wages, are able to consume one pound more meat each per week than formerly.

Our farm labor proper (meaning *hired* farm labor) is a small item compared with the labor of farmers and their sons. There are about 900,000 farm laborers, exclusive of the freedmen, and 2,500,000 farm proprietors, yet the labor of these 900,000 is no insignificant item. At \$308 each per annum it amounts to an aggregate of \$277,200,000, \$2,200,000 more than Mr. Levi's estimate of agricultural labor in Great Britain. And this is but little more than one-fourth of the actual farm labor done by white laborers. The freedmen, of whom a large portion of the adults, male and female, are farm laborers, will swell the total estimate of agricultural labor to a magnificent figure.

It is believed that such an exhibition of the facts of this great department of human industry will furnish profitable food for reflection and information tending to promote the profits of industry and the welfare of the human race.

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## WOOL CONSUMPTION.

The strangest misconceptions of the actual amount of wool annually consumed in the United States are common in newspapers and in statements of individuals. But the wildest of the statements yet made by intelligent parties is that of the Special Commissioner of Revenue, in his recent report upon the revenue system.

The first point taken is, that wool growers, in demanding a minimum of ten cents per pound specific and ten per cent ad valorem, desire to raise the price of wools to that extent, and it is attempted to be shown that such a rate would operate as a ruinous tax upon the resources of the country. To fortify such an assumption the astounding estimate is seriously made of a present average annual consumption of 150,000,000 pounds of manufactured woollens, and upon this extraordinary blunder, which in this case is certainly worse than the crime of intentional misrepresentation, is based an estimate of increased cost of such goods to the extent of \$71,250,000.

The estimate is as follows :

"The number of sets of woollen machinery or series of cards employed in the United States, reported to the Wool Manufacturers' Association in October, 1865, was four thousand one hundred,|| consuming 2,252,545 pounds of scoured wool, and substitutes for wool, per week; but these returns, it was stated, did not probably indicate more than three-fourths to four-fifths of the sets then in actual operation. Suppose, however, the balance to consume wool equal to the



shrinking from the cards to the manufactured goods—and there is no doubt but they will do more than that—we have, then, as the weekly product of the country, (in prosperous times,) two million five hundred thousand pounds of cloth per week, or one hundred and seventeen millions of pounds per annum.

“Again, the weight of the woollen goods imported into the United States during the fiscal year 1866, the commissioner, after a careful examination, estimates to have been as follows:

Woollen goods proper.....	17,000,000 pounds.
Carpets.....	2,500,000 pounds.
Dress goods, bunting, and worsted manufactures.....	13,500,000 pounds.
Total.....	<u>33,000,000 pounds.</u>

“These results, therefore, indicate the present average consumption of manufactured woollens in the United States to be about one hundred and fifty million pounds per annum.

“It must be evident, now, that, to the extent to which the cost of wool is increased to the American manufacturer, through the increased duties on his raw materials, it will be necessary to impose an equivalent increase of duties on the importations of foreign woollens, otherwise the increased price of wool, growing out of the duty, would act as a bounty in favor of the foreign manufacturer, and prove speedily disastrous both to the American wool-grower and to the American woollen manufacturer.

“To balance the duties proposed upon wool, the executive committee of the woollen manufacturers claim, and endeavor to prove it to be essential to the preservation of their industry, that, for every cent of duty imposed on wool, four cents per pound must be charged on all woollens imported. It is also clear, that if the price is to be enhanced to the extent of the duty, the advance must be estimated alike on goods made of domestic as well as of foreign wool. Consequently, for every cent of duty imposed on wool, the American consumer will be taxed four cents per pound on his manufactured woollens; which tax on the present annual consumption of the country, viz: one hundred and fifty million pounds, would amount to the sum of six million dollars for each cent of duty imposed on wool.

“Assuming the existing rate of duty upon unwashed wool at six cents per pound, the present annual tax for the protection of this interest is, therefore, ( $\$6,000,000 \times 6 \text{ cents} =$ )  $\$36,000,000$ ; but at the proposed rate, assuming eleven and a half cents as the minimum, this tax will be further increased ( $\$6,500,000 \times 5\frac{1}{2} =$ )  $\$32,250,000$ ; or, in other words, the proposed tariff on wool and woollens will tax the community (if it should have the effect sought by those who propose it) to the extent of seventy-one millions two hundred and fifty thousand dollars per annum for the protection of an interest the whole annual value of whose product, as we have already shown, cannot be considered in excess of thirty-six millions of dollars gold valuation”

Now, by the estimate of manufacturers, it requires four pounds of foreign wool to make one of cloth, and this estimate is recognized above, by assuming the duty of one cent upon a pound of wool to be four upon a pound of cloth. The estimate of 150,000,000 pounds of cloth is therefore equivalent to 600,000,000 pounds of wool per annum.

The following errors are included in this statement:

*Error first.*—While the manufacturers estimate four pounds of foreign wool to one pound of cloth, they reckon but two and one-sixteenth pounds of native wool to one pound of cloth. As our present wool “clip,” by the estimate of the Commissioner, is 100,000,000 pounds, it would make 48,500,000 pounds of cloth, and yet he counts it all as foreign wool, of which 194,000,000 pounds

would be required to make the same quantity of cloth. He therefore reckons one cent per pound of tax upon 94,000,000 pounds more wool than we should use if his assumption of 150,000,000 pounds of cloth consumption were correct. Nearly one-sixth of the estimated tax on consumers, or about \$12,000,000, is therefore disposed of by the exposure of this minor error.

*Error second.*—Allowing for the error above, affecting the calculation of the annual tax upon consumers, the Commissioner estimates the annual consumption of wool at 506,000,000 pounds, divided as follows :

Domestic supply.....	100,000,000 lbs., making	48,500,000 lbs. cloth.
Foreign supply.....	406,000,000 lbs., making	101,500,000 lbs. cloth.
Total.....	506,000,000 lbs., making	150,000,000 lbs. cloth.

To show the absurdity of the assumption that this country produces only one-fifth of the quantity of wool required, the following statistics, the general accuracy of which no one acquainted with the facts will seriously question, are given, showing very nearly, the actual amount of wool manufactured or imported from July 1, 1861, to July 1, 1865, comprising almost exactly the period of the war :

#### DOMESTIC SUPPLY.

Clip of 1861.....	55,000,000 lbs.
Clip of 1862.....	67,500,000 lbs.
Clip of 1863.....	82,500,000 lbs.
Clip of 1864.....	95,000,000 lbs.
Total.....	300,000,000 lbs.

#### IMPORTATIONS OF WOOL.

Years.	WOOL.		SHODDY OR FLOCKS.	
	Pounds.	Dollars.	Pounds.	Dollars.
1862.....	41,654,241	6,424,767	6,291,077	422,376
1863.....	71,917,754	11,772,064	7,867,601	581,234
1864.....	87,193,462	14,595,140	8,133,391	621,514
1865.....	40,372,075	6,201,108	4,863,064	410,395
Total.....	241,137,532	38,993,079	27,155,133	2,055,519

This is the amount of wool bearing a duty which has been imported in this period. In addition, the amount introduced free under the reciprocity treaty with Great Britain is as follows :

Years.	Pounds.	Dollars.	Cents per pound.
1862.....	1,916,785	569,839	29.7
1863.....	1,980,053	781,867	39.5
1864.....	3,202,642	1,328,851	41.4
1865.....	3,486,079	1,527,275	43.8
Total.....	10,585,559	4,207,832	39.6

The total foreign supply of our woollen manufactures in the four years reported was, therefore, as follows :

	Pounds.	Cost.
Dutiable wool .....	241, 137, 532	\$38, 993, 079
Free from Canada.....	10, 585, 559	4, 207, 832
Free in 1862 from other countries .....	304, 825	55, 539
Shoddy .....	27, 155, 133	2, 055, 519
Total .....	279, 183, 049	45, 311, 969

*Statement of woollens imported for four years ending June 30, 1865.*

	1862.	1863.	1864.	1865.
Woollen cloths and shawls.....	\$5, 547, 644	\$5, 147, 404	\$10, 693, 035	\$5, 257, 819
Blankets .....	1, 945, 707	1, 297, 864	749, 793	833, 741
Woollen and worsted yarns.....	372, 523	383, 011	434, 549	393, 130
Delaines and dress goods.....	17, 229	1, 744, 639	10, 069, 768	7, 817, 139
Carpets .....	466, 596	1, 016, 562	1, 658, 380	471, 659
Flannels .....	30, 798	.....	457, 410	83, 329
Felt and lasting .....	6, 485	.....	102, 910	87, 213
All others .....	6, 435, 412	10, 822, 145	7, 968, 491	5, 393, 533
Total .....	14, 884, 394	20, 411, 625	32, 139, 336	20, 347, 563

Total woollens imported, 1862.....	\$14, 884, 394
Total woollens imported, 1863.....	20, 411, 625
Total woollens imported, 1864.....	32, 139, 336
Total woollens imported, 1865.....	20, 347, 563
Total .....	<u>87, 782, 918</u>

This amount of woollens, upon the authority of the president of the Ohio Wool Association, is equivalent to 220,000,000 pounds of wool.

The grand total, then, of wool obtained and woollens imported in four years represents the following amounts of wool :

Domestic supply.....	300, 000, 000 lbs.
Foreign importation.....	279, 183, 049 lbs.
Equivalent in woollens imported.....	220, 000, 000 lbs.
Total.....	<u>799, 183, 049 lbs.</u>

Or almost exactly 200,000,000 pounds per year, instead of 506,000,000 pounds required by the Commissioner's estimates, or 600,000,000 pounds upon which consumers' tax for protection was based.

So here is another reduction of that tax, amounting (in round numbers) to thirty-six millions of dollars, in addition to twelve millions in *error first*—a miscalculation of forty-eight millions of dollars, and less than twenty-four millions left.

The extravagance of this estimate of woollens requiring 506,000,000 pounds of wool annually may be again shown by reference to consumption in former years. The manufactures and importations for a series of years preceding the war scarcely equalled an average of four and a half pounds to each individual. Mr. Randall's estimates never exceeded this quantity. During the war, as is shown

above, the supply of wool was eight pounds to each individual, (200,000,000 pounds to 25,000,000 people in loyal States;) but the *consumption* was scarcely more than seven pounds, as an immense amount of domestic wool and woollens remained in the hands of wool merchants, manufacturers, and wholesale and retail traders, and in government stores on the first of July, 1865.

Thus the average consumption was raised from four and a half pounds to seven pounds, or fifty-five per cent. through the waste of war and the scarcity of cotton. The Commissioner's estimate would be equivalent to fifteen and a half pounds, or three times as much as is required for ordinary consumption. Even a heavy increase, from a growing preference to wearing woollens, would not necessarily require more than six pounds to each individual.

Again, the Commissioner in his estimate, heretofore quoted, divides the woollen onsumption into two portions as follows :

Foreign woollens .....	33, 000, 000 lbs., requiring	132, 000, 000 lbs. wool.
U. S. manufactures.....	117, 000, 000 lbs., requiring	468, 000, 000 lbs. wool.
Total.....	150, 000, 000	600, 000, 000 lbs. wool.

This is his estimate, for he assumes four pounds of wool in the dirt for one pound of cloth, in estimating a tax of one cent per pound upon wool, to amount to four cents per pound for cloth, (and the manufactures make the ratio the same,) and upon this estimate he figures a tax for wool protection of \$71,250,000. If his premises were correct, and all this 150,000,000 pounds of woollens were made of foreign-grown wool, it would be true that we must have, in some shape, a yearly supply of 600,000,000 pounds of wool. But he forgets that 100,000,000 pounds of this is native,  $2\frac{1}{6}$  pounds of which will make a pound of cloth. Though he does not fail to use this error in swelling his tax, let it be deducted in ascertaining how much wool our manufacturers must seek abroad on his own hypothesis. Then the statement would read :

United States wool....	100, 000, 000 lbs., producing	48, 500, 000 lbs. cloth.
Foreign .....	274, 000, 000 lbs., producing	68, 500, 000 lbs. cloth.
Annual manufacture...	374, 000, 000	117, 000, 000 lbs. cloth.

Where do our manufacturers obtain 274,000,000 lbs. of foreign wool ?

This is almost equal to the total importation of four years of war, and lacks but little of the entire importation of *seventeen years* of peace, from 1841 to 1857 inclusive, which amounted to 283,146,923 lbs.

Where is all this wool obtained ? Not of Great Britain. She imports little more than 200,000,000 pounds per annum, and manufactures most of it. Not of South America. The most of hers goes to Great Britain, and nearly all of that produced in the wool-growing colonies of South Africa and Australia.

The foreign wool of Great Britain, in 1865, from official figures, was as follows :

Imports .....	209, 364, 249 lbs.
Exports of foreign and colonial.....	82, 443, 755 "
Remaining for consumption.....	126, 920, 494 "

If the vast manufacturing system of Great Britain consumes but 126,920,494 pounds of foreign and colonial wool, will the special commissioner tell how our woollen manufacturing interest has attained so surpassing a magnitude, and how it is to obtain more than twice as much foreign wool as the British manufactures require ?



But the whole estimate is a grand blunder. This country needs now scarcely more than fifty million pounds of cloth, and not more than one hundred and seventy million pounds of wool. Our manufacturers are now doing little, and some of our wool-growers have two or three clips on hand. There is to-day, with the spring clip, as much clothing-wool in the country as we need to manufacture until shearing-time in 1868; and in three years, with proper protection, our wool-growers can easily produce every ounce of wool needed, carpet wools and all.

This strange misstatement of the revenue report, which is not indorsed by any intelligent manufacturer, or any association, is calculated to produce two results:

1. Misrepresent the amount of taxation possibly resulting from protection.
2. Create the impression that we need at least five times as much foreign wool as there is any occasion for.

*Error third.*—The hypothesis that the duty will necessarily increase the price of wool and cost of cloth by the full amount of such duty. Free-traders usually assume that it does, and they very frequently *prove*, for their own purposes, from admitted facts, that it does not. In another portion of the revenue report it is admitted that the increased duty of last summer did not increase the price of wool. If such result has just occurred, and often before, with what propriety can it be assumed that it never will again? But it is no part of the present purpose to discuss this question.

It has been shown that two-thirds of the assumed cost of the proposed duty on wool is based upon over-estimates, reducing \$71,250,000 to \$23,750,000. Unless the assumption of increased price should be more accurate than the estimate of consumption, there would be little left of the remaining sum to act as a bugbear to consumers of woollens.

## INSECTS INJURIOUS TO COTTON PLANTS—NO. 6.

### THE RED-BUG, OR COTTON-STAINER.

(*Dysdercus suturellus*. H. SCHF.)

This destructive insect is found by millions in East Florida on the cotton plantations, where it does immense damage by staining the fibre of the cotton in the bolls, and rendering it unfit for use where pure white fabrics are required. The specimens figured were found near Jacksonville, in October, on the open bolls, under the dried calyx, congregating together on the dead leaves under the plants, on rotten logs, or decayed wood. Several of the open bolls were actually red with these insects, exhibiting every stage of growth from the larva to the perfect insect, all clustered together in such masses as almost to hide the white of the cotton itself. The beak or rostrum is four-jointed, with the end blackish, and when not in use is recurved under the thorax, which is somewhat triangular in shape, with the anterior part red; a narrow, distinct band of whitish-yellow divides the thorax from the head; the posterior part is black, edged between the thorax and wing-cases with whitish-yellow; the scutellum is triangular, red, and edged with a distinct line of whitish-yellow on each side and partly down the centre of the wing-case; the elytræ or wing-cases are flat, brownish-

black, and containing two distinct x-shaped whitish-yellow lines on them, intersecting each other near the centre; the wing cases are also edged with a distinct yellowish line as far as the x. The body is flattened, and in the female projects on each side beyond the wing-cases, showing the bright red of the abdomen, and contrasting with the dark color of the wing-cases. The under wings are hidden under the upper wing-cases, and are transparent, veined, and of a yellowish color, clouded with black. The thighs of the fore legs are somewhat spiny near the tibiæ, and of a red color. The tibiæ and tarsi are black; the under part of the body is bright red, with rings of yellowish-white running round it on the edge of each segment.

The female produces about one hundred eggs; the young larva is completely red, almost scarlet, with distinct whitish-yellow bands around the body, on the edge of each segment. The thighs are red, with the tibiæ, tarsi, and antennæ blackish.

The pupa differs only in size, and in having the unformed wing-cases very small and black, contrasting strongly with the vivid red of the body.

The perfect male is about three-fifths of an inch in length, and the female about seven-tenths of an inch, from the head to the end of the abdomen. They are similar in shape and color, differing only in size. The head and eyes are red, the antennæ black, with four long joints.

The following communication on the subject of this insect was received from Mr. B. Hopkins, of Jacksonville, a practical sea-island planter, of nearly thirty years' experience:

"The 'red-bugs,' or, as they are sometimes properly denominated, the 'cotton-stainers,' generally make their appearance about August, or late in July, which is near the usual season for cotton to begin to open. They can readily be distinguished from other bugs, harmless in their nature, by their being of a red color, and more sluggish in their movements. The nearer the fruit advances towards maturity, the more injury they do to the cotton. The pod, or boll, is perforated by this bug. Whether the staining matter is imparted to the fibre of the cotton during the perforation directly or by a slow process, diffusing itself with the sap abounding at that time in the pod, is not yet ascertained. I am of the latter opinion, from the fact that almost the entire product of the boll is discolored when it opens, which does not seem at all to cause a premature development. As winter approaches, they gradually retire, and take refuge among the logs, or burrow into the soil at the root of the cotton-plant, where they hibernate. After a wet season in winter, they may be found in hundreds on the sunny side of the stalks, enjoying the genial atmosphere, until towards evening, when they again retire. They can be kept down very easily, when there are not more than five acres planted to the hand.

"I have been in the habit of offering a reward every night to the negro that brings in the greatest quantity, each of whom is furnished with a pint bottle suspended across the shoulders, into which, as they pass along picking the cotton, they deposit all they can discover. In many instances, I have seen the bottle filled by one negro in a day. They may also be greatly reduced, by destroying them when they come out in winter, in their half-torpid state; a torch of fire in that case is best. They may be buried a foot under ground, and most of them will still escape from their inhumation. If there should be stumps or trees in the fields, they should be burned, and that will generally reduce the quantity for a year or more. In fact, when they receive timely and proper attention, they need not be dreaded.

"No process that I know of can extract the stain produced in the bolls; it is indelible, and considerably reduces the price of the cotton in the market. These insects have been much on the increase for the last ten years, which I attribute to the excess in planting, as well as the want of proper efforts for their destruction."

It has been stated by other planters that the fœces of the insect produces the reddish or greenish stain, and that the red-bugs will collect where there are splinters or fragments of sugar-cane. Advantage has already been taken of this habit to collect them by means of small heaps of the chips of sugar-cane, when they may be destroyed by boiling water ; and as they also collect around piles of cotton-seed, they may thus be easily decoyed, and then killed, either by fire or hot water, when congregated. All stumps and dead trees standing in the field should be well burnt out. The experiment of destroying them by means of the crushed sugar-cane and poison has been tried ; but, as no report of the experiment has been received, it remains doubtful whether it can be recommended or not.

*Total area, population, and statute acres under crops, bare fallow, and grass, and of cattle and sheep in each division of the United Kingdom of Great Britain.*

Divisions.	Total population in 1861.	Total area in statute acres.	ABSTRACT OF ACREAGE UNDER CROPS, BARE FALLOW, AND GRASS.						Total of estimated ordinary stock of cattle.	Total number of sheep as returned in 1866.
			Total acreage under all kinds of crops.	Under corn crops.*	Under green crops†	Under bare fallow.	Under clover and other grasses under rotation.	Permanent pasture (exclusive of hill pasture.)		
England.....	18,954,444	32,530,397	22,761,833	7,400,170	2,750,002	760,979	2,296,087	8,998,027	3,420,044	15,124,541
Wales.....	1,111,780	4,734,486	2,284,674	521,074	139,265	169,878	256,732	1,257,721	546,966	1,663,663
Scotland.....	3,062,294	19,639,377	4,158,360	1,366,540	663,257	94,080	1,141,415	893,066	968,637	5,255,077
Total for Great Britain....	23,128,518	56,904,260	28,704,867	9,257,784	3,552,530	964,937	3,634,224	11,148,814	4,935,647	22,048,281
Ireland.....	5,798,967	20,322,641	15,549,796	2,173,433	1,482,091	28,060	1,600,495	10,002,058	3,742,932	4,270,027
Isle of Man.....	52,469	180,000	82,902	27,266	12,208	8,357	25,309	9,762	18,687	55,954
Channel islands—Jersey.....	55,613	28,717	20,357	3,142	5,253	2,552	3,205	6,205	12,037	517
Guernsey, &c.....	35,365	17,967	11,999	2,041	2,938	372	886	5,762	6,976	1,214
Total for United Kingdom.	29,070,932	77,513,585	.....	11,493,666	5,055,020	1,004,278	5,324,119	.....	8,716,279	26,375,993

\* Under corn crops are included wheat, barley, oats, rye, beans, and peas.

† Under green crops are included potatoes, turnips, and swedes, mangold, carrots, cabbage, koll, rabi, rape, vetches, lucern, and any other crops except clover or grass.

*Population, area, and acreage under crops and grass in the United Kingdom and in various foreign countries.*

Countries.	Date of acreage returns.	Population, according to the latest returns.	Total area, in English statute acres.	Total acreage under crops and grasses, (exclusive of vineyards and olive grounds).	Acreage (in English statute acres) under corn crops.							Other kinds of grain.	Total under corn crops.
					Wheat, (including spelt).	Barley or bere.	Oats.	Rye.	Beans and peas.	Mixed grain.	Buckwheat.		
Great Britain .....	1866	23, 128, 000	56, 964, 000	28, 704, 867	3, 385, 391	2, 237, 229	2, 759, 923	60, 077	815, 061	.....	.....	.....	9, 287, 784
Ireland .....	1866	5, 739, 000	20, 323, 000	15, 549, 736	300, 471	152, 777	1, 037, 648	7, 733	14, 741	.....	.....	.....	2, 173, 133
<b>Total for United Kingdom, including Isle of Man and Channel Islands.</b>	<b>1866</b>	<b>29, 071, 000</b>	<b>77, 513, 000</b>	<b>.....</b>	<b>3, 637, 635</b>	<b>2, 388, 485</b>	<b>4, 469, 237</b>	<b>67, 879</b>	<b>860, 370</b>	<b>.....</b>	<b>.....</b>	<b>.....</b>	<b>11, 493, 666</b>
Sweden .....	1866	4, 022, 000	107, 517, 000	10, 998, 000	115, 000	615, 000	942, 000	877, 000	124, 000	241, 000	.....	.....	2, 914, 000
Denmark proper .....	1861	1, 663, 000	9, 354, 000	5, 545, 720	140, 448	687, 179	811, 580	473, 591	94, 885	.....	61, 431	76, 359	2, 315, 273
Wurtemberg .....	1865	1, 718, 000	4, 757, 000	3, 010, 833	544, 284	237, 904	317, 982	102, 162	18, 543	.....	52	14, 781	1, 233, 708
Bavaria .....	1863	4, 807, 000	18, 967, 000	11, 138, 387	1, 043, 531	838, 779	1, 120, 704	1, 461, 789	123, 223	.....	4, 456	9, 790	4, 601, 275
Holland .....	1864	3, 638, 000	8, 617, 000	5, 024, 240	194, 730	101, 315	293, 613	476, 984	129, 080	.....	162, 323	.....	1, 331, 015
Belgium .....	1856	4, 782, 000	7, 211, 000	4, 521, 377	804, 758	110, 130	511, 317	721, 492	143, 964	102, 985	60, 517	.....	2, 481, 433
France .....	Latest returns.	37, 517, 000	132, 787, 000	97, 506, 251	17, 252, 466	2, 570, 853	8, 058, 631	5, 417, 278	1, 127, 832	1, 415, 273	1, 751, 546	1, 486, 333	33, 080, 735
Austria, (exclusive of Galicia, except Cracow, Bukowina, the Tyrol, and the military frontier.)	Latest returns.	34, 070, 000	145, 310, 000	58, 407, 589	3, 662, 164	2, 755, 415	6, 573, 921	6, 978, 008	182, 937	1, 749, 691	514, 722	3, 967, 260	26, 384, 108
Italy, (including Venetia) .....	Latest returns.	24, 031, 000	68, 747, 000	43, 324, 589	.....	.....	.....	26, 980, 369	.....	.....	.....	357, 493	27, 337, 802
Switzerland .....	1855	2, 534, 000	9, 945, 000	4, 962, 987	.....	.....	.....	1, 435, 555	.....	.....	.....	.....	1, 435, 555



*Population, area, and acreage under crops and grass, &c.—Continued.*

Countries.	Date.	Acreage (in English statute acres) under green crops.				Bare fallow or uncropped arable land.	Clover and artificial and other grasses under rotation.	Permanent pastures, meadows, &c.
		Potatoes.	Turnips, parsnips, carrots, mankoid, and beet root.	Other green crops, as rape, colza, &c.	Total under green crops.			
Great Britain.....	1866	498,843	2,417,744	635,943	3,552,530	964,937	3,694,224	11,148,814
Ireland.....	1866	1,030,419	341,120	90,552	1,462,091	28,060	1,600,495	10,002,058
Total for United Kingdom, (including Isle of Man and Channel Islands)	1866	1,528,609	2,770,612	728,799	5,055,020	1,004,278	5,324,119	.....
Sweden .....	1866	334,000	.....	.....	2,850,000	.....	.....	4,900,000
Denmark proper.....	1861	69,176	5,635	32,445	107,256	405,064	1,760,403	927,525
Wurtemberg .....	1865	107,948	60,210	229,587	457,745	233,845	194,906	*808,629
Bavaria .....	1863	649,735	162,468	206,422	1,018,625	1,172,133	720,133	3,625,554
Holland .....	1864	265,987	79,618	184,734	530,339	61,256	56,957	3,034,642
Belgium .....	1856	309,850	81,947	257,327	709,124	159,112	396,787	771,870
France .....	Latest returns.	2,048,364	890,195	1,379,823	4,318,382	14,091,392	6,331,830	33,683,922
Austria, exclusive of Galicia, (except Cracow,) Bukowina, the Tyrol, and the military frontier.	Latest returns.	1,308,148	46,817	454,512	1,809,477	Not stated.	1,302,434	28,911,570
Italy, (including Venetia) .....	Latest returns.	Not ascertained	.....	.....	.....	Not stated.	.....	16,186,787
Switzerland .....	1855	Included with acreage under corn crops.	.....	.....	.....	.....	.....	3,527,431

\* Including hill pasture.

## PARIS EXPOSITION.

DEPARTMENT OF AGRICULTURE,  
Washington, January 25, 1867.

The following circular has been issued from this department. The small appropriation of \$5,000 towards this object was passed by the Senate, but rejected by the House:

SIR: Your prompt and active co-operation is respectfully solicited in furtherance of the object of the following joint resolution of Congress, approved January 11, 1867:

## [PUBLIC RESOLUTION—No. 2.]

“A RESOLUTION to provide for the exhibition of the cereal productions of the United States at the Paris Exposition in April next.

“*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled*, That the Commissioner of Agriculture be, and he is hereby, instructed to collect and prepare, so far as practicable, and with as little delay as possible, suitable specimens of the cereal productions of the several States of the Union for exhibition at the Paris Exposition, and forward the same in proper order and condition for shipment to J. C. Derby, agent of the United States government for the Paris Exposition, at New York: *Provided*, That it shall require no further appropriation from the public treasury.”

An exhibition such as is proposed of the finest samples of the best varieties of wheat, corn, and other cereals, would command the admiration of Europe, as it would assuredly arouse the pride of all Americans, and I regret that this department has not been authorized to make collections for this purpose until the present time. The Exposition opens on the first of April, and collections should be sent in a few days from the reception of this request, to be in season for proper arrangement, packing, forwarding to New York, and transportation to Paris. You will render the country essential service by immediate and judicious action in this matter.

It is desirable that *small* packages of the finest samples of the best varieties of such products of your neighborhood should be forwarded, by mail, in packages of two pounds or less, each distinctly marked with name, donor, local name, and county and State in which it was grown.

Such packages, addressed to the Commissioner of Agriculture, can be sent without postage from any post office in the United States. As it will be seen, the resolution makes no appropriation for this purpose; therefore, parcels should not be sent by express in any case, unless at the expense of communities represented.

Very respectfully,

ISAAC NEWTON, *Commissioner*.

## EXTRACTS FROM CORRESPONDENCE.

## THE MONTHLY REPORT.

*South Parsonfield, Maine*—Your monthly reports give me just the information I have wanted for years. Knowing the supply and demand, I am able to sell at my own price, and we can also foresee what will probably be wanted next year. Give practical farmers facts and let gentlemen of leisure theorize.



In behalf of working farmers I will thank you for not *berating* us, as most agricultural writers do, for our ignorance and stolidity. We could improve our farms if it would pay, but most of us need present profits.

#### FRUIT CULTURE IN MARYLAND.

*Baltimore County, Md.*—This county contains a great deal of unimproved land of good quality, though situated so near the large city of Baltimore, where a market is found for anything the husbandman can raise. The waste and unimproved lands will be rapidly turned into cultivated farms, pomological gardens, &c. The great enemy to agriculture and improvement was slavery, and marked changes must take place where the institution existed. It is worthy of note that the greatest care is being taken by farmers and others in regard to fruit culture, and an enormous number of young orchards have been planted with apples. The grape is also receiving much attention, while the pear, so long neglected, is not behind in the list.

#### HOG CHOLERA.

*Bedford, Indiana.*—The hog cholera has been more than ordinarily destructive in this county the present season, and unless some remedy be devised against its ravages the farmers will be compelled to abandon pork-raising as too hazardous.

#### EXPERIMENTS WITH FERTILIZERS.

*Hamilton county, Ohio.*—I give you a statement in reference to experiments tried the last season, but first let me say that the last winter was the worst on fall grain I have experienced in thirty years, the ground being dry and bare and the grain seriously injured. I soaked my seed wheat in a solution of blue vitriol and salt. The grain was badly affected with smut. It came up strong and grew well, stood the winter, and gave nearly a full crop, while one-half the wheat in the neighborhood scarcely paid for cutting. For my potatoes and corn I used super-phosphate of lime, a small handful in the hill, at the rate of about two hundred pounds to the acre; land naturally rich, upland soil; planted the potatoes in alternate rows with the lime; amount of land, one acre. Result, 200 bushels of potatoes with the lime, 100 bushels without it. I thus obtained 100 bushels of potatoes for three dollars, the cost of the lime, as it cost no more to cultivate with than without the lime. The experiment with the corn gave about one third more with the lime than without it.

#### POTATO ROT.

*Clinton county, Ohio.*—Our potato crop bid fair to average 200 bushels to the acre, but the wet weather in the latter part of the season caused them to rot. It was not the common potato rot, but an incident attributable entirely to a superabundance of water. Over blind ditches and on our dryest ground they did not rot.

#### HARDY GRAPES, UNDERDRAINING, ETC.

*Sandusky, Ohio.*—In my vineyard last season the following varieties of grapes had fair crops in about the order named: York, Madeira, Oporto, Logan, Clinton, Concord, Hartford Prolific, Creveling, Delaware, and Catawba. These vines had no protection, though the thermometer runs as low as 12° below zero. \* \* \* We seldom or never fail of a crop of apples in this locality. I exhibited at our State fair 150 varieties and took the first premium. The apple tree grows so luxuriantly and bears so profusely here that it is hardly appreciated, and the quality is far superior to that grown in the eastern States. I have been much surprised when travelling in England to find apples with so little flavor, and

cider tasting like vinegar and water. In Germany and France they are not much better. The orchards have not the luxuriant growth and fine appearance of our western orchards. \* \* \* I have been engaged in underdraining for the last ten years, and as the result of my experiments I will mention one lot of twelve acres, the most of which was too wet to raise corn except in very favorable seasons. This land was thoroughly underdrained, and I have since taken two splendid crops of corn and one fine crop of barley, (forty bushels per acre,) and then the lot was ploughed deep once and put into wheat early and last year, bad as the season was, harvested twenty bushels of fine wheat to the acre. The expense of draining was less than \$200 in the way I worked it, being mostly done in the winter, when I could spare my hands the best. It will be seen that one-half of last year's crop more than paid the expense of the underdraining. Another instance: A lot of about fifteen acres was partially drained and put in corn the past year. The portion of the land that was drained yielded nearly one hundred bushels of ears to the acre, while the part undrained produced scarcely fifty bushels. \* \* \* My experiments prove that most of our land, when thoroughly underdrained and sowed early, will generally produce good crops of winter wheat.

#### WHEAT CROP IN NEBRASKA.

*De Witt, Cuming county, Nebraska.*—In recording the final results of the year just closed, it may not be uninteresting to give a few facts and figures of the most remarkable wheat crop ever harvested in this county. Although the average yield per acre is only 30½ bushels, it would have been much higher were it not for a number of weedy farms having light yields, which reduced the total product. The best yield was that of a farm on Rock Creek bottom. The owner informs me that he sowed thirteen bushels of seed and harvested four hundred and forty bushels, or at the rate of forty-six bushels per acre. We raised over thirty thousand bushels of wheat in this county the past year, with a population of five hundred souls.

#### OPENING FOR CAPITAL AND ENTERPRISE.

*Madison county, Georgia.*—Northern capitalists are coming into the State and engaging in manufacturing, agriculture, mining, &c. The resources of Georgia are varied and incalculable. Nearly all the products which make up the necessities and luxuries of life are found within her limits. What she needs is improved systems of husbandry and capital for manufacturing. With these she would soon become one of the first States in the Union. Now that slavery is abolished, the people will doubtless become more settled and cultivate less land, but do it more thoroughly. The State presents fine openings for men of industry, skill, and capital. So genial is the climate that two crops are often made upon the same land—wheat and corn, or wheat and sweet potatoes.

#### A SOLDIER-FARMER IN MISSISSIPPI.

*Lauderdale county, Mississippi.*—I came here a discharged northern soldier, totally ignorant, practically, of even the first principles of farming. Could not commence operations until February, and then with such hands as I could pick up. The plantation had not been worked for several years, was covered with logs, overgrown with briars, and fences gone. Yet, with all this, I succeeded in planting about 200 acres. Oats proved a failure; castor beans, ditto; corn, an average of ten bushels to the acre; cotton averaged a bale of 500 pounds to each 3½ acres, peas, sufficient to pay for sowing; sweet potatoes, several hundred bushels. My expenses for labor, feeding stock, &c., amounted to \$3,500, against which I have 34 bales of cotton, 400 bushels of corn, \$100 worth of sweet potatoes, and \$150 increase in value of mules. So I have no cause to complain of

my experiment. My plantation is in far better condition now, my hands are hired and work already commenced for another year. I shall cultivate about 400 acres this year, and devote it entirely to cotton.

#### SCARCITY OF LAROR.—HOPS AND INDIGO.

*Grenada, Mississippi.*—We stand greatly in need of labor, and until that need is supplied but little prosperity can be looked for. I am tenanting my farm as rapidly as I can with white tenants, upon the English plan. I shall place my vineyard, orchard, and garden in the hands of a vintner, pomologist, and gardener, on the same principle, as soon as I can procure a reliable one. I do not expect to make much progress this year, further than initiating, but the next I hope to have my system in full blast. Two articles of production which have never received attention here can be grown to perfection and made remunerative, to wit, hops and indigo. When enterprise and capital take hold of our soil, no portion of the globe will yield richer rewards, no country develop more rapidly, none will excite a more emulous pride.

#### FREED LABOR IN NORTH CAROLINA.

*Mocksville, North Carolina.*—I find it decidedly better for both the white man and the negro that the latter has been freed. My freedmen are doing much better for me now than when they were slaves. They are supplied with the plough, stock, and a house to live in, with wood furnished gratis; also their blacksmith's bill paid. I give them one-third of all they make, and have no trouble with them. They work well without overseer or driver, and having an interest in the crop, take corresponding interest in the work. If the negro knew how to economize, he would soon be a better liver here than many of the northern laborers. Our staples, cotton and tobacco, will always bring fair prices in cash. One great misfortune with the negro is that they do not know how to trade, being easily imposed upon. A good many also will not work as long as they have anything to live upon. I think they will find out before long that it is absolutely necessary for a man to work and take care of what he earns.

*Wilmington, North Carolina.*—Our farmers, generally, are much depressed. Their exertions during the year 1866 have not been crowned with success, and they begin the new year under very discouraging circumstances. Labor is, if possible, more embarrassed and discouraging than last year, and is more than ever becoming the great question of the south; the freedmen are indisposed to contract or hire on any terms, and seem to be waiting for some great donation of land or other munificence from Congress or other source. In the mean time vagrancy and crime increase among them, and land-holders, wearied in the difficulties of the past, and the perplexities and discouragements of the present, are gloomy in respect to the future. But in all this confusion and poverty they welcome any cheering ray of hope that the present may evolve or the future promise.

#### LABOR IN ALABAMA.

*Moulton, Alabama.*—Our laborers are chiefly freedmen, and in most cases they are furnished with land and ploughing stock, and work the plantations on shares, usually one-half. In many instances this year they have made really nothing, after paying expenses. Some first-rate hands receive \$15 per month and board, others not more than \$10 and board, and a few as low as \$6. Everything in this line is very unsettled as yet.

#### FARMING IN UTAH.

*Logan, Cache county, Utah.*—Farming in Utah and farming in the eastern States are entirely different operations, and an eastern farmer coming here would have to learn his business over again. Cultivating land by irrigation causes



this great difference. A farmer has to learn *how*, and especially *when*, to irrigate his crop, how to lay out his land to the best advantage, how to lay out and make sluices, &c., and to become familiar with the various kinds of soil, which require great difference in treatment, in ploughing, and irrigating. \* \* \* Our wheat crop would have averaged thirty-five or forty bushels per acre had it not been for rust, which struck it in consequence of the unusual wetness of the season.

## CASUAL NOTES.

*The cotton worm.*—The New York Mercantile Journal, in an article on the cotton worm, and the means of preventing its ravages, says :

“A Louisiana French paper suggests a method, commonly adopted in France, to protect the cabbage plants from insects. The larvæ are destroyed by sowing among the rows a certain quantity of hempseed, and, probably, placing layers of hemp between them would answer the same purpose.

“The subject is worthy of the investigation of the ablest governmental agencies that can be brought to bear upon it, if the planters themselves have not enterprise enough to take the proper measures.”

The utility of hemp sown around or among cabbages to prevent the depredations of insects is said, by an English author, not to be owing to any noxious or repellant quality of the plant to the caterpillars, but merely because birds are attracted by the shelter and seed afforded by the hemp, and can feed undisturbed upon caterpillars and other insects in the garden.

*Rice in South Carolina.*—Georgetown county, South Carolina.—Since my last I have in figures, from the mills, as follows : Tierces of clean rice prepared for market, of the crop of 1866 up to January 1867, twelve hundred and thirty-six bushels. Estimate of the entire crop for market 6,000 tierces. A larger portion of seed will be required and has been reserved for the crop of 1867, but this, added to the estimate of 6,000 tierces, (equal to 132,000 bushels,) will bring the crop of 1866 to less than twenty bushels to the acre. \* \* \* On the plantations the depredations upon stock continue most provokingly, and although cholera has destroyed a large proportion of hogs, and sheep have been decimated by distempers, by far the greatest loss of hogs, sheep, and cattle has resulted from larceny. The whites are not exempt, but chiefly by the freedmen have the depredations been committed. \* \* \* There is a deficiency of labor for the tide-lands, and at least 3,000 hands could find employment in this district the present year, in rice culture alone, at ten dollars per month, with house rent, fuel, and rations for themselves, but not for their families. Owing to the scarcity of capital, farms are worked, as last year, on shares, the laborers in no instance getting less than one-third the gross product, and in some cases nearly one-half, (with privileges equal to one-half the gross product.) And yet the tide of migration has set in, and many have left for cheaper and less productive lands, and thousands of acres of the richest alluvial soil on this continent are doomed to abandonment.

*Colorado Agricultural Society.*—The Agricultural Society of this Territory is enterprising and progressive. The first fair was held last season on a forty-acre tract near Denver, which was purchased and enclosed with a substantial concrete wall, and improved with convenient buildings and fixtures, all costing about \$12,000. Premiums amounting to \$500 were given, and the receipts of the fair were \$3,500. The officers of the society give a favorable account of the agricultural capabilities of the Territory in the following paragraph :

"Judging from the agricultural productions placed upon exhibition, we are of the opinion that uplands on the plains produce equally as good and heavier crops of grain than the low bottom lands. Also, that as fine garden vegetables can be grown in the mountains, almost to the very foot of the snowy range, as upon the plains. These conclusions are arrived at from samples of wheat and corn grown upon the divide between the Platte river and Clear creek, in Jefferson county, and specimens of turnips, potatoes, &c., from gardens as far in the mountains as the immediate vicinity of Georgetown, in Clear Creek county."

*The cedars of Lebanon.*—Rev. Mr. Jessup, a missionary from the United States, has discovered new groves of cedar trees, five in number, three of them of great extent, east of Ain Zabalteh, in the southern Lebanon. This grove lately contained 10,000 trees, and had been purchased by a barbarous sheik from the more barbarous Turkish government for the purpose of trying to extract pitch from the wood. The experiment failed; the sheik was ruined, but the result was the destruction of several thousand trees. One of the trees measured fifteen feet in diameter, and the forest is full of young trees, springing up with great vigor. He also found two small groves on the eastern slope of Lebanon, overlooking the Bukaa above El Medruk, and two other large groves, containing many thousand trees, one above El Baruk, and another near Maasiv, where the trees are very large and equal to any others; all are being destroyed for firewood. Still another grove has been discovered near Duma, in the western slope of Lebanon, near to the one discovered by Tristram himself.

*The history of the potato*—In a paper recently read by a Mr. Crawford in London on "the relation of plants to ethnology," a very short but complete account was given of the introduction of the potato into Europe. The potato is still found on the western slopes of the Andes, the tubers, however, being no larger than the common filbert. Even the Indians, said Mr. Crawford, cultivated the potato before the arrival of the Europeans. It was first brought from America to Ireland, where it was cultivated in 1656; but it is said to have been introduced into Spain and Portugal even before that date. From Ireland it found its way to the Low Countries and to Germany, and from Spain it reached Italy and France. It is an object of cultivation in Asiatic countries only where Europeans have colonized or settled, and there chiefly for their consumption, and only since the beginning of the present century. It is successfully cultivated in Australia and New Zealand, where there is no esculent farinaceous root at all, not even the yam, the taro, or the manioc.

*Quality of department seeds.*—A correspondent in Iron county, Utah, writing relative to the quality of seeds distributed from this department, makes the following exhibit of the remarkable increase of wheat, oats, and barley: Ten ounces of spring Mediterranean wheat, sowed in drills on the 15th of May, and harvested in about 90 days, yielded 37 pounds, an increase of 59-fold; 8 ounces of white Swedish oats produced 76 pounds, being a yield of 152-fold; 1 ounce of two-rowed barley returned 15 pounds, or 240 fold increase. The soil was a sandy loam, supplied with a liberal dressing of cattle manure ploughed in. It is claimed that two crops of oats may be grown from one sowing, if put in early, and irrigated immediately after cutting the first crop.

*Cuming county Nebraska.*—The white Mediterranean (winter) wheat which you sent me in the fall of 1865 came to hand too late for sowing time, and, as winter wheat does not do well in this locality, I at once decided to sow it in the spring, and, if possible, make spring of it. I accordingly sowed it last spring. The result was gratifying; the two-thirds of a quart sowed yielded three pecks of good wheat. The white Swedish oats you sent me are a decided success. I raised over one bushel from the package—a little less than a quart—they are the best oats I have ever seen; are very heavy, weighing forty pounds to the bushel.

This county raised over *thirty thousand* bushels of wheat this year, with a population of a little over five hundred souls; and over half of it was raised by farmers who came here from Wisconsin less than two years ago, and settled on the prairie under the homestead law. The answer above stated is not guess work, but taken from the thrasher's book. Such splendid wheat as was raised here the present year would dazzle the eyes of those who said Nebraska was a desert. The yield run as high as *forty-six* bushels to the acre.

*Crops in West Virginia.*—Our correspondent in Berkeley county, West Virginia, says that several cases of hog cholera have occurred there recently. He gives a statement of acreage and quantity of crops, and states that the quality of wheat was much better in 1836 than in 1865, weighing sixty-one pounds against fifty-six pounds per bushel. The following exhibit is made for the county:

Product.	1860.	1866.					1865.
	Quantity.	Quantity.	No. of acres.	Average per acre.	Average price.	Total value.	Total value, same as in 1865.
Wheat .... bush.	237,576	121,345	18,665	6.5	2.85	\$345,833 25	\$280,614 25
Indian corn.do..	275,523	465,175	15,605	29.89	55	255,446 25	291,891 60
Oats.....do..	76,176	44,475	1,860	23.9	36	16,011 00	17,668 24
Rye.....do..	18,672	3,270	545	6	1.10	3,597 00	3,118 50
Buckwheat .do..	1,074	845	65	13	90	760 50	
Hay.....tons.	8,031	2,670	2,750	97	17.50	46,725 00	57,855 00
Sorghum...galls.	.....	580	10	58	1.00	580 00	
Total.....	.....	.....	39,500	.....	.....	670,693 50	651,147 59

*The cattle plague*—The cattle disease has disappeared completely from Switzerland, and the prohibition decreed by the Italian government against the importation of cattle has been removed.

The *rinderpest* having broken out afresh in Austria, the Bavarian government has refused to allow a large number of oxen intended for the English market to cross the frontier.

The *Farmer* (Scottish) of November 14, 1866, says: What we trust will prove the last cattle plague return was issued on Thursday. It reports that last week there were but two attacks in England, one in Warwickshire and one in Yorkshire.

At a recent rent audit, the tenants on the estate of Mr. J. E. Heathcote, of Opedale Hall, were allowed ten shillings in the pound upon the losses they have suffered from the cattle plague. This allowance is independent of what may have been received from the insurance association.

The total amount of the claims of the members on the funds of the Fifeshire Cattle Plague Association, on account of cattle lost by the cattle plague, before the passing of the cattle disease prevention act, exceeds £30,000, and the general committee have declared an interim dividend of 3s. per £1.

*Casabianca Wool.*—In the province of Casabianca, as in the rest of Morocco, the wool trade ten or twelve years since was confined to the limits of the district itself. It was only in 1858 that the export of wool took, in the province of Casabianca, as well as in the provinces of Chaouya and Urdegrah, such a development that in 1864 the shearing was double what it was in any preceding

year. It is estimated that the province will this year offer for export from 3,200 to 3,600 bales, or 8,000 cwt. to 9,000 cwt. The town of Casabianca is not merely the market on which the sale may be observed of the wool of the province of which it is the chief town. It is at Casabianca that there arrives, as at a general transit *entrepôt*, the wool of the provinces of Zanetta, Zieida, Medakara, Ouled-Ariss, Ouled-Zian, and Mediouna, all neighbors of Casabianca, and known under the generic name Chaouya. It is calculated that by drawing upon these sources of supply the Casabianca market might add about 25,000 cwt. to its exports.



# METEOROLOGY.

NOVEMBER AND DECEMBER, 1866.

*Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain, (in inches and tenths,) for November and December, 1866, at the following places. The daily observations were made at 7 o'clock a. m. and 2 and 9 p. m.*

[Compiled in the Department of Agriculture from the reports made by observers for the Smithsonian Institution.]

States and places.	NOVEMBER, 1866.						DECEMBER, 1866.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain & melted snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain & melted snow.
MAINE.		°		°	°	In.		°		°	°	In.
Steuben.....	16, 20, 21	52	26	9	.....	5.76						
Lee.....							24	49	30	0	26.0	2.59
Barnard.....	30	55	26	17	34.2	4.21	24	46	31	-13	23.2	2.99
West Waterville...	8, 30	57	26	20	39.0	2.64	5	48	30	-9	25.6	2.37
Gardiner.....	30	57	26	16	39.1	3.18	5	48	30	-8	25.5	3.00
Lisbon.....						3.76			30	-14	.....	3.55
Webster.....	16, 30	55	24, 26	10	37.1	.....	4	50	30	-14	23.5	.....
Standish.....							4	50	29	0	21.8	2.55
Rumford Point....	29	61	25, 26	18	37.3	4.38						
Cornish.....	29	63	26	13	35.0	3.28	7, 24	48	21	-9	23.8	3.66
Cornishville.....	29	62	26	17	37.1	3.58	24	49	20, 21	-2	24.9	4.06
Averages.....					37.0	3.85					24.3	3.10
NEW HAMPSHIRE.												
Stratford.....	16	58	26	12	34.5	4.60	24	44	21	-22	19.1	1.81
Shelburne.....	7, 20	54	26	16	.....							
North Barnstead...	9	67	26	18	42.4	4.45						
Concord.....	29	67	26	12	40.4	3.33	5	56	21	-16	25.9	2.96
Claremont.....	29	67	26	11	38.0	1.25	7	49	20, 21	-8	24.0	4.73
Do.....	29	64	26	11	38.4	.....	4, 5, 7, 24	46	21	-10	23.5	.....
Averages.....					38.7	3.41					23.1	3.17
VERMONT.												
Lunenburg.....	2, 29	68	8, 16, 17	28	46.8	3.25	7	60	29	-20	20.9	1.85
Craftsbury.....	29	58	26	14	34.6	4.88	4	44	21	-16	19.8	2.25
Randolph.....	29	60	26	9	32.6	4.08	5	48	21	-28	21.3	2.60
Middlebury.....	29	60	25	19	39.5	3.67	4	49	21	-13	23.5	2.58
Brandon.....							7	51	21	-12	25.4	1.87
Barnet.....	18	56	26	10	37.4	2.75	9	40	20	-20	27.7	1.00
Wilmington.....	8	58	26	7	37.5	.....	7	45	21	-20	22.1	.....
Averages.....					38.7	3.72					23.0	2.03

Table showing the range of the thermometer, &amp;c., for November and December.

States and places.	NOVEMBER, 1866.						DECEMBER, 1866.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain & melted snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain & melted snow.
MASSACHUSETTS.												
Kingston .....	8	67	26	20	45.2	3.13	8	58	21	9	33.0	3.02
Topsfield.....	7	68	26	20	45.3	2.34	4	58	21	6	31.8	2.78
Lawrence .....	29	66	26	15	40.9	2.43	24	52	21	— 7	29.0	3.16
Georgetown .....	29	67	26	12	42.7	.....	7	53	21	— 6	27.4	.....
Newbury.....	29	68	26	13	40.9	.....	7, 24	52	21	— 4	27.8	.....
North Billerica .....	29	68	26	8	41.4	.....	4	52	20, 22	0	27.1	.....
New Bedford .....	8	64	25, 26	22	43.8	2.55	6	54	21	2	31.7	2.99
Do.....	9	64	26	15	43.9	3.36	24	55	21	3	31.7	3.73
Worcester.....	29	63	26	18	43.3	2.51	7	54	21	— 3	28.2	3.73
Mendon .....	8, 28, 29	62	5, 26	19	42.2	4.60	8	53	21	— 5	26.1	.....
Lunenburg .....	29	67	26	12	41.5	.....	7	51	21	—10	25.5	.....
Amherst .....	9	61	26	17	40.1	3.68	7	51	21	— 4	26.3	3.57
Springfield .....	29	65	26	17	41.9	3.24	5	56	21	— 6	27.6	3.30
Richmond .....	10	60	25	22	37.9	6.54	7	50	21	—14	23.5	11.25
Williams College ..	20	60	26	15	40.2	4.00	4, 7	49	21	—17	23.7	3.80
Averages.....					42.1	3.49					28.0	4.13
RHODE ISLAND.												
Newport .....	8, 9, 10	64	26	20	42.1	4.35	6	55	21	2	30.5	4.35
CONNECTICUT.												
Pomfret .....	8	62	26	18	40.5	4.22	8	55	21	— 5	28.6	3.55
Columbia.....	9	72	26	18	46.2	.....	8	58	21	— 6	30.3	.....
Middletown .....	9	64	26	17	43.8	4.34	5, 7	55	21	— 5	29.8	3.31
Colebrook .....	29	67	26	10	38.7	.....	6, 7	48	21	—11	23.1	.....
Groton .....	15	68	26	20	45.8	3.68	8	54	21	— 2	31.6	5.28
Averages.....					43.0	4.06					28.7	4.05
NEW YORK.												
Moriches .....	8	71	26	20	48.2	3.34	5, 7	62	21	10	35.3	5.94
South Hartford....	9, 29	63	6	19	42.0	4.55	4	52	21	—14	25.1	3.62
Germantown .....	8	65	26	15	40.5	5.80	7	56	21	—16	26.5	6.30
Garrison's.....	29	63	26	18	41.5	4.04	4	52	21	— 5	28.0	2.90
Throg's Neck.....	9	68	24, 25	26	45.4	.....	4	58	21	— 0	30.2	.....
White Plains.....	29	63	26	21	44.7	.....						.....
Deaf & Dumb Ins'n	10	64	5	28	45.2	3.84	8	57	21	2	31.7	3.92
St. Xavier's College	8	62	26	27	46.7	2.95	7	55	21	3	33.3	2.47
Columbia College..	8, 20	59	26	26	44.9	3.00	4, 7, 8	53	21	3	31.3	3.12
Flatbush .....	8, 20	61	26	21	44.5	2.89	4, 8	56	20	5	30.9	0.95
Newburgh .....	8	66	26	25	45.2	3.74						.....
Gouverneur .....	29	58	25	16	38.2	3.93	4	52	21	27	21.8	3.76
North Hammond..	8, 29	57	25	18	38.8	6.78	4, 8	49	21	—20	21.1	6.11
South Trenton .....	8	54	25	21	38.6	5.34	8	44	21	—22	23.9	4.10
Oneida .....	9	69	24	14	39.6	7.36	8	56	21	—26	25.6	3.79
Houseville.....	29	59	25	9	36.2	8.10	4, 8	47	20	—13	21.5	4.01
Depauville.....	29	58	25	18	39.7	5.17	8	51	21	—18	25.2	4.07
Theresa .....					4.86	.....				—27	.....	5.16
Oswego .....	29	59	25, 26	19	40.9	5.92	8	52	21	—15	26.5	7.28
Palermo.....	29	59	25	11	37.1	6.60	4	57	21	—22	23.4	6.05

Table showing the range of the thermometer, &amp;c., for November and December.

States and places.	NOVEMBER, 1866.						DECEMBER, 1866.					
	Date.	Max temp.	Date.	Min. temp.	Mean temp.	Rain & melted snow.	Date.	Max temp.	Date.	Min. temp.	Mean temp.	Rain & melted snow.
NEW YORK— Continued.		°		°	°	In.		°		°	°	In.
Paldwinsville.....	29	56	26	16	38.6	.....	8	52	21	—19	24.7	3.30
Skaneateles.....	29	57	25	14	37.2	9.50	8	50	20	—9	25.4	.....
Nichols.....	29	64	25	19	40.2	5.92	7, 8	54	21	—24	26.4	.....
Geneva.....	29	66	25	22	41.7	2.89	7, 8	53	21	—6	27.3	1.76
Rochester.....	28	59	6, 25, 26	24	46.7	3.29	8	57	21	—10	27.7	3.32
Rochester Univ'y..	8, 28	58	6	21	39.6	3.29	8	54	21	—9	25.9	3.32
Little Genesee.....	8, 9, 29	60	6	15	38.9	4.30	8	51	21	—21	23.6	3.23
Friendship.....	28	62	25	16	38.9	.....	8	50	21	—19	24.1	.....
Buffalo.....	10	58	6	23	40.6	3.91	8	54	21	—5	26.9	6.46
Averages.....					41.4	4.85					26.7	4.12
NEW JERSEY.												
Paterson.....	29	63	26	20	43.7	3.33	4	57	21	—1	29.6	3.34
Newark.....	29	63	26	23	45.0	2.09	7, 8	56	21	—1	30.9	2.91
New Brunswick.....	29	67	26	22	43.9	2.61	7, 8	55	21	1	30.5	2.83
Trenton.....	29	66	26	30	48.3	4.30	7	57	21	6	33.7	5.63
Burlington.....	29	68	26	22	41.8	2.60	5, 7, 8	56	21	2	30.8	4.50
Moorestown.....	11	66	26	21	44.6	1.83	7, 8	59	21	2	31.5	3.56
Mount Holly.....	29	69	26	21	45.2	.....	8	62	21	4	32.7	.....
Dover.....	29	69	25, 27	33	49.2	0.79	8, 24	58	20	3	34.6	3.48
Reddington.....	8	75	26	22	47.9	.....	8	60	21	—1	30.9	4.45
Haddonfield.....	29	69	26	23	45.4	1.82	7	57	21	2	31.7	3.43
Greenwich.....	29	66	26	23	46.2	1.62	7, 8	57	21	5	33.2	2.53
Averages.....					45.8	2.33					31.8	3.67
PENNSYLVANIA.												
Noyes.....	8, 9	65	25	10	37.5	6.20	5	59	21	—24	23.7	2.40
Fallsington.....	29	68	26	24	46.0	1.90	7	58	24	4	32.3	3.10
Philadelphia.....	29	70	26	30	47.4	1.47	8	61	21	6	34.3	3.52
Germantown.....	29	66	26	21	45.1	.....	7	64	21	0	28.2	.....
Moorland.....	29	69	26	23	44.7	2.42	7, 8	57	21	0	30.4	2.62
Dyberry.....	8, 9, 10 13, 29	60	26	10	37.8	.....	5, 7	48	21	—20	23.9	.....
North Whitehall...	29	60	26	20	41.9	.....	6, 7	54	21	—12	28.6	.....
Parkesville.....	11	65	26	22	43.9	2.25	8	57	21	2	30.9	2.91
Stevensville.....	29	64	26	18	40.6	3.58	7	55	21	—24	27.1	2.61
Reading.....	29	70	26	26	45.3	.....	8	59	21	3	31.7	.....
Ephrata.....	8, 10	70	26	22	46.0	3.45	7	76	21	0	31.0	2.20
Mount Joy.....	12	67	24, 25	32	46.6	1.50						
Harrisburg.....	29	62	26	28	46.4	3.27	8	57	21	7	31.9	2.06
Lewisburg.....	29	63	26	19	40.6	4.60	8	55	21	—21	25.6	2.80
Tioga.....	9	64	25, 26, 27	18	39.6	4.25	8	60	21	—26	26.0	2.40
Pennsylvia.....	29	60	26	16	37.9	4.22	8	51	21	—8	22.8	3.84
Connellsville.....	28	71	6	19	41.3	.....	5, 8	54	20, 21	—4	26.8	.....
New Castle.....	28	64	7	26	43.6	.....	8	57	21	—1	27.9	.....
Canonsburg.....	28	68	6	18	41.2	3.44	8	57	21	—8	26.1	3.13
Averages.....					42.8	3.27					28.3	2.80

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DELAWARE.		°		°	°	In.		°		°	°	In.
Delaware City.....							4, 6, 7, 8	56	21	8	32.3	
MARYLAND.												
Woodlawn.....	8	69	26	25	46.6	2.75	5	68	21	4	32.8	2.92
Catonsville.....	3, 17	66	26	26	46.5	1.50	8	60	21	6	30.6	
Annapolis.....	29	65	7	27	47.6	3.72	8	66	21	11	36.5	3.94
Emmitsburg.....	2	68	26	20	46.3		7	62	21	— 6	29.7	
Averages.....					46.8	2.66					32.4	3.43
WEST VIRGINIA.												
Cabell Court-House.....							6, 7	62	29	7	34.3	1.30
Romney.....	2	70	26	20	41.4		5	64	21	— 4	28.7	
Averages.....					41.4						31.5	1.30
NORTH CAROLINA.												
Statesville.....	3, 4	70	7, 18, 26	22	44.2	5.50	7, 8	64	29	10	35.5	4.15
Wilson.....	28	75	26	29	50.6	2.45	7, 8	74	21	17	41.5	2.25
Oxford.....	29	63	26	36	53.5		8	70	21	17	38.6	
Raleigh.....	28	75	24	30	49.2	2.83	6, 8	70	28	12	37.0	3.99
Averages.....					49.4	3.59					38.2	3.46
GEORGIA.												
Atlanta.....	2	76	25	19	46.6	4.46	7	66	11	16	36.5	4.84
ALABAMA.												
Moulton.....	3, 4	75	25	28	51.7							1.73
Bon Secour River..	5	82	24, 25	37	59.5							
Averages.....					55.6							1.73
FLORIDA.												
Gordon.....							6	89	28	27	46.8	
Fernandina.....							6, 7	72	12, 28	30	50.2	2.60
Averages.....											48.5	2.60
TEXAS.												
Austin.....	18	83	30	36	62.3	4.81	2	78	30	30	51.8	1.40
Kaufman.....							3, 7	79	15	31	53.0	
Averages.....					62.3	4.81					52.4	1.40
MISSISSIPPI.												
Natchez.....	9	76	30	31	56.4	6.94	5, 22, 23, 26	72	30	25	50.3	6.23
Kingston.....	4	77	30	41	59.1		4	78	30	28	49.4	
Grenada.....	27	60	25	29								
Fayette.....	9	75	30	32	54.0		5	66	11, 30	24	47.1	
Averages.....					56.5	6.94					48.9	6.23
ARKANSAS.												
Helena.....		78	30	29	55.7	4.75	23	70	10, 29	23	47.5	11.09



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<b>TENNESSEE.</b>												
Clarksville .....	3	77	25	28	48.9	4.72	7	64	30	13	37.4	3.71
Lookout Mountain.	3	77	24	29	49.1	.....	7	61	30	12	35.7	.....
Tusculum College.	28	68	1, 26	26	44.5	.....	6	64	29	12	35.4	.....
Averages.....					47.5	4.72					36.2	3.71
<b>KENTUCKY.</b>												
Louisville .....	2, 3	66	25	22	45.5	4.82	6	60	30	2	34.5	3.01
Chilesburg .....	2	68	25	26	45.2	5.63	7	60	29	6	33.0	2.82
Danville .....	4	72	25	24	46.4	3.76						
Averages.....					45.7	4.74					33.8	2.92
<b>OHIO.</b>												
New Lisbon .....	9	65	26	20	41.1	2.56	4, 7, 23	55	21	- 4	23.9	3.62
East Fairfield.....	9, 28	58	26	23	40.8	2.82	8	55	21	0	26.2	3.25
Steubenville.....	28	67	26	25	43.9	.....						
Milnersville.....	28	64	6	17	38.3	3.38	5	56	28	- 3	26.2	3.34
Cleveland .....	28	62	26	30	43.1	.....	8	60	20, 21	4	27.3	.....
East Cleveland....	8	61	6	23	41.6	3.04	8	58	20	- 2	27.6	2.63
Gallipolis.....	28	70	6, 7, 26	26	44.2	3.41						
Kelley's Island....	8	59	24, 30	31	43.4	3.48	7	53	30	8	29.0	2.23
Norwalk .....	7, 9, 27	60	6	24	41.1	3.10	4	55	30	- 2	27.9	2.25
Westerville.....	7	59	25	25	42.0	4.52	5, 6	54	30	- 6	30.0	0.87
Kingston .....	2	66	6	25	42.4	2.78	7	57	30	- 2	28.4	2.30
Toledo .....	8	61	23	25	40.6	3.13	8	53	30	3	27.4	2.56
Marion .....	9	58	6, 25	24	39.8	4.17	4, 5, 7, 8	49	30	- 4	26.0	2.89
Kenton.....	9	75	25	32	48.9	8.43	4	62	30	- 11	30.0	6.04
Urbana University.	28	59	25	22	40.8	3.27	7	52	30	- 9	26.5	2.11
Hillsborough .....	28	61	6, 25, 30	28	41.9	3.35	7	55	30	- 1	27.4	2.62
Ripley .....							5	59	28	10	33.6	1.75
Bethel.....	8	62	25	22	41.0	4.39	5	56	30	- 5	27.0	3.38
Cincinnati.....	8	61	25	26	43.9	3.06	7	57	30	7	30.0	1.98
Do .....	2, 28	62	30	34	48.2	1.63	7	60	30	12	36.4	1.82
College Hill .....	3, 9	56	30	26	42.6	5.50	7	56	30	0	28.2	1.86
Farmers' School...	8	56	12, 25	25	40.8	3.15	6	59	30	- 2	28.3	2.98
Averages.....					42.4	3.64					28.4	2.66
<b>MICHIGAN.</b>												
Monroe City.....	8	58	7	24	39.8	2.75	9	50	30	4	28.6	2.73
State Ag. College..	9	57	25	18	37.9	2.60	8	52	14	6	25.5	1.90
Litchfield.....	7	58	23, 24, 25	18	37.1	4.75	7	49	18	2	22.4	2.80
Grand Rapids.....	7, 9	56	6, 25	23	37.7	8.70	8	47	14	6	23.2	2.68
Kalamazoo .....							2, 4, 5	58	14	4	24.1	.....
Northport .....	8	58	5, 23, 25	26	37.6	.....	7	52	21	7	24.0	.....
Holland .....	7	59	6	21	38.5	2.01	3	47	14	2	27.0	5.24
Ontonagon .....	7	64	4, 5, 24, 30	26	35.8	.....	2	48	30	- 9	21.6	.....
Homestead .....	8	57	25	19	37.4	.....	7	45	15	- 6	24.6	.....
Averages.....					43.1	4.16					24.6	3.07



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	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain & melted snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain & melted snow.
<b>INDIANA.</b>												
		°		°	°	<i>In.</i>		°		°	°	<i>In.</i>
Richmond .....	2	57	25	23	40.0	3.47	7	54	30	— 9	26.2	3.14
Aurora .....	2	64	12	26	42.7	3.26						
Vevay .....	8	64	25	27	45.3	4.22	5	60	30	5	31.9	3.09
Muncie .....	10	57	25	22	40.7	4.85	7	52	30	— 2	26.8	3.60
Spiceland .....	2	58	25, 30	24	41.5	4.20	5	54	30	— 6	27.1	4.00
Columbia City .....	28	62	24	23	39.8	3.60	5, 6	50	30	— 2	26.0	2.38
Indianapolis .....							7	54	28	— 1	27.6	
Merom .....	3	63	29	23	43.6	3.20	5, 7	57	30	4	29.8	3.55
New Harmony .....	3	75	25	25	46.3	3.18	7	60	30	5	34.2	3.48
Averages .....					42.5	3.75					28.7	3.32
<b>ILLINOIS.</b>												
Evanston .....	8	63	25	22	40.2	1.01						
Marengo .....	8, 19	60	24	17	37.1	2.75						
Riley .....							2, 3	46	12	— 6	20.8	3.54
Golconda .....	9	85	23	26	48.7	3.20	8	72	27	10	36.3	3.48
Aurora .....	9	63	24, 25	20	38.7	0.94	6	47	30	— 4	22.4	3.80
Sandwich .....	7	65	25	18	36.8	0.28	2	49	30	— 8	22.5	3.16
Ottawa .....	1, 7	66	24, 30	26	41.7	0.90	2	54	27	5	26.7	2.97
Winnebago .....	7	63	24	16	37.2	0.59	2	48	30	— 6	20.9	3.84
Hennepin .....	7	66	24, 25	22	40.0							
Magnolia .....							4	60	17, 27, 30	— 2	22.3	3.91
Rochelle .....	7, 8	63	24	17	39.2		2	50	30	— 6	23.3	
Wyanet .....	9	75	24	19	40.5	0.24	4	52	30	— 1	25.0	3.60
Tiskilwa .....	7, 8, 9	60	24	20	39.7		2, 4	58	27	1	25.8	
Elmira .....	7	64	30	18	40.0	0.35	2, 5	52	12, 27	— 3	25.4	2.12
Peoria .....	1, 7	63	30	22	42.6	0.51	2	54	27	3	28.2	2.05
Springfield .....	3	70	24	26	45.8		4	62	27	7	30.7	
Loami .....	1	66	30	19	41.3	0.40	2	56	12	2	28.7	1.70
Waterloo .....							7	67	27, 30	14	37.2	
Du Bois .....	3	72	29	20	39.7	3.70	4	53	30	3	27.8	3.05
Galesburg .....	8	65	30	17	40.0	0.48	2	51	17, 27	0	25.1	1.58
Manchester .....	3	69	30	22	43.2	0.50	2	60	12, 17, 27	6	30.3	2.03
Mt. Sterling .....	1, 9	68	24, 29	20	43.6		2	62	27	2	29.0	
Andalusia .....	1, 8, 9	60	30	18	40.7		4	54	17	6	28.3	
Augusta .....	8	66	24	21	43.2	0.51	2	53	17	2	29.4	2.88
Averages .....					40.9	1.09					27.0	2.91
<b>WISCONSIN.</b>												
Manitowoc .....	8	59	25	23	38.8	1.62	3, 6, 7	45	30	— 3	23.5	1.07
Plymouth .....	8	60	25	17	36.8	1.30	3, 7	45	30	— 9	21.0	1.90
Milwaukee .....	8	60	25	21	39.1	1.32	2, 3	49	30	— 5	23.2	3.00
Do .....	8	61	25	20	39.9	1.44	3, 6	47	30	— 7	23.9	2.90
Delavan .....	8	60	24	18	36.8	0.41	2	47	12, 30	— 8	21.1	2.64
Waupaca .....	7, 8	60	24, 30	19	27.6		2	49	29	— 6	21.4	
Embarrass .....	7, 9	62	25	15	35.6	3.07	2, 7	42	30	— 14	14.6	1.74
Rocky Run .....	8	66	24	16	36.7	1.38	2, 3, 4	44	30	— 11	20.1	1.06
Beloit .....	8, 9	59	24	18	36.2	2.85						
Baraboo .....	7	62	24	18	39.1		2	56	30	— 6	23.4	1.38
Averages .....					37.7	1.67					21.4	1.96

Table showing the range of the thermometer, &amp;c., for November and December.

States and places.	NOVEMBER, 1866.						DECEMBER, 1866.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain & melted snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain & melted snow.
<b>MINNESOTA.</b>												
Beaver Bay .....	9	53	30	1	31.7	0.80	3	43	29	-15	14.9	0.39
Afton .....							7	49	29	-14	17.4	.....
St. Paul .....	7	55	30	-1	32.6	3.19	7	43	29	-13	16.8	0.50
Do. ....	8	59	30	1	34.0	2.55	7	47	29	-12	18.2	0.27
Minneapolis .....	9	57	30	3	33.7	3.00	7	52	29	-14	17.4	0.33
Sibley .....	8	59	30	2	34.2	2.32						
New Ulm .....	8	62	30	2	36.0	1.33	7, 22	46	29	-11	19.3	0.24
Averages .....					33.7	1.20					17.3	0.35
<b>IOWA.</b>												
Clinton .....	9	66	30	20	40.4	0.50	2, 4	50	12, 17, 27, 28	0	25.2	3.50
Lyons .....	9	66	24, 30	22	.....	0.47	6, 7	44	28	-2	22.3	4.30
Davenport .....	7	62	30	14	39.7	0.52	2, 4	47	27	-1	23.0	4.16
Dubuque .....	1	63	30	18	35.2	0.99	4	47	12	0	22.6	1.20
Monticello .....	1	66	24, 30	18	37.5	1.45	5	55	17	6	23.4	2.15
Burlington .....	1	68	30	18	40.8	.....	2	52	17	-1	25.5	.....
Fort Madison .....	1	65	24	18	40.0	0.84	2	52	12	1	26.1	2.48
Guttenberg .....	1	68	24, 30	10	35.4	.....	4	46	12	-10	19.7	.....
Ceres .....	1	64	24	13	37.5	.....	3	55	12	-4	21.5	.....
Manchester .....	1	66	24	13	34.4	0.95	4	47	12	-8	.....	.....
Mount Vernon .....	7	62	24	15	37.6	.....	4	49	11, 12	-6	21.4	.....
Iowa City .....	1	72	24	16	40.2	1.51	4	53	11	-2	23.6	3.54
Independence .....	1	68	24	10	39.3	2.60	3, 4, 6, 22	48	29	-10	19.2	2.00
Do .....	1	62	24	16	37.0	.....	3	47	27, 29	-2	.....	.....
Waterloo .....	1	66	25, 30	19	36.0	.....	3, 6	48	12, 26, 27, 28	0	20.0	.....
Iowa Falls .....	2	60	30	14	38.0	0.98	2, 3, 6	44	11, 29	-4	21.6	1.03
Des Moines .....	1	69	30	12	41.3	.....	4	51	17	-2	23.7	1.63
Algona .....	8	64	29, 30	12	34.5	.....	22	48	29	-10	19.6	.....
Fontanelle .....	1	70	30	9	38.7	0.75	4	51	11, 12, 27	-1	22.0	1.64
Averages .....					38.0	1.05					22.4	2.51
<b>MISSOURI.</b>												
St. Louis .....	3	73	30	25	45.6	1.37	2	55	12, 27	11	33.5	1.87
St. Louis University .....	3	73	30	27	46.5	1.24	2	56	27	11	34.5	1.85
Allenton .....	3	77	25	17	43.2	1.48	4	57	30	-1	31.1	2.78
Union .....	3	81	23, 30	20	45.5	1.11	5	57	17, 29, 30	8	34.0	2.05
Edinburg .....	1	68	30	13	42.1	3.00	3	58	11	5	29.3	2.28
Harrisonville .....	3, 4	76	30	17	44.3	2.89	5	56	27, 29, 31	8	30.0	3.23
Easton .....	4	79	29, 30	16	44.9	1.24						
Averages .....					44.6	1.76					32.1	2.34
<b>KANSAS.</b>												
Leavenworth .....	4	77	30	14	43.3	2.24	2	59	29	-4	28.2	2.92
Olatha .....	3	77	24, 30	16	32.1	3.85						
Atchison .....	6	61	30	17	43.3	4.40						
State Agric. College .....	4	81	24, 29	20	46.4	1.37						
Council Grove .....	4	78	29	23	47.0	1.35	2	60	31	4	32.4	1.20
Averages .....					42.4	2.64					30.3	2.06

Table showing the range of the thermometer, &amp;c., for November and December.

States and places.	NOVEMBER, 1866.						DECEMBER, 1866.					
	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain, & melted snow.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain & melted snow.
NEBRASKA.		°		°	°	In.		°		°	°	In.
Elkhorn .....	6	70	30	10	39.7	.....	4	61	29, 31	0	23.7	.....
Bellevue .....	2, 6, 7, 8	64	29	15	43.6	1.33	3, 4	50	31	4	26.9	1.51
Glendale .....	1, 6	74	30	6	38.8	1.15	1	57	11	— 1	23.3	1.60
Averages .....					40.5	1.24					24.6	1.56
UTAH.												
Great S. Lake City.	3	72	29	28	45.2	2.25	21	52	5, 10	22	38.3	4.56
Wanship .....	1, 2	69	13	16	38.1	.....						
Averages .....					41.7	2.25						
CALIFORNIA.												
San Francisco .....	2, 3	61	29	48	54.5	2.90						
Sacramento .....	1	74	28	37	53.8	2.43						
Monterey .....	22	68	12, 13	42	52.0	2.33						
Averages .....					53.4	2.55						
OREGON.												
Corvalis .....	10	66	13	32	.....							
Albany .....												4.88
MONTANA.												
Helena City .....	1	6	28	20	41.7	0.50						

## NOTES OF THE WEATHER.—NOVEMBER, 1866.

## FROM THE SMITHSONIAN INSTITUTION.

*St. John, New Brunswick.*—November 23.—Snow from early morning to 9 a. m.;  $4\frac{1}{4}$  inches; the first of the season.

*Gardiner, Maine.*—The mean temperature of November for thirty years is  $35.89^{\circ}$ ; the month just closed was  $2.8^{\circ}$  warmer. The amount of rain and melted snow was one inch and thirty-nine hundredths below the average.

*Williamsburg, Maine.*—November 5.—Ice on pond an inch and an eighth thick.

*Lee, Maine.*—November 23.—Snow began to fall at 4 a. m. and continued until the 24th; depth five inches; ground slightly frozen; sleighing good; three days' sleighing this month.

*Claremont, New Hampshire.*—November 25.—About an inch of snow fell last night.

*Stratford, New Hampshire.*—November 9.—The observer saw a dandelion in bloom to-day.

*Randolph, Vermont.*—November was remarkable for the small quantity of snow that fell, being less than an inch in all. Sheep and cattle continued to graze in the field and get most of their subsistence in that way. There is no frost in the ground, and farmers still contrived to plough up to the close of the month.

*Deputyville, New York.*—November 30.—The ground was free from snow during the month except on the 25th and 26th. The weather of the month was rather pleasant and favorable for the season, and never prevented farmers from ploughing.

*South Hartford, New York.*—November 28.—The observer picked from the road side, to-day, two completely developed dandelion blossoms.

*Rochester, New York.*—The mean temperature of November was  $1.47^{\circ}$  higher than the average of the month for a series of years.

*Newark, N. J.*—The mean temperature of November was nearly one degree and seven-tenths above the average of the month during the last twenty two years. The amount of rain was nearly an inch and three-quarters below the average, and less than in any previous November during the same period, except in 1845. The autumn, now closed, was warm, with about eight-tenths of an inch of rain more than the average. Its mean temperature was higher than all but three of the preceding twenty-one, the exceptions being in 1846, 1849, and 1850.

*Philadelphia, Penn.*—November 5.—The first ice observed in the streets; very thin. 24th.—The first snow of the season; quantity inappreciable; lasted from 9 a. m. to  $9\frac{1}{2}$  a. m.

*Fallsington, Penn.*—The month was a pleasant one for farmers to gather their crops, and was the warmest November since 1850.

*Reading, Penn.*—No snow to whiten the ground in November; the railroad trains from Schuylkill Haven, Schuylkill county, brought about a quarter of an inch of snow on the morning of the 24th.

*Toga, Penn.*—Nearly the whole month has been favorable to agricultural operations, having been generally warm and dry until within the last few days.

*Gowdysville, S. C.*—November 1.—Very large white frost; ice. 25th.—The ground frozen at 7 a. m. about half an inch.

*Bon Secour river, Ala.*—November 1.—First frost. 29th, storm of wind and rain on Mobile bay, four miles from place of observation. It came down the bay, or rather from N.E., until about 9 a. m. The wind on land was from southwest at 7 a. m. The storm was accompanied by diffuse lightning and rain between the squalls.

*Grenada, Miss.*—November 23.—The first killing frosts of the season. 25th.—The first freeze; ground frozen to the depth of a quarter of an inch. The month was unusually mild and fine, with but little rain.

*Natchez, Miss.*—November 1.—A light frost this morning in the suburbs, but none in the city proper. 25th.—About 3.30 a. m. a heavy thunder-storm from the southwest, with lightning, thunder, and a high wind for about twenty minutes. The rain fell in torrents.

*Kingston, Miss.*—November 1.—First frost. 30th, first hard killing frost.

*Fayette, Miss.*—November 1.—First frost; tender vegetation not affected. 30th, first killing frost; only tender vines injured, and these in many places not entirely killed. General fall of leaves during the last week of the month.

*Austin, Texas.*—November 27.—A norther began at 4 p. m. In the evening diffused lightning in the east. Colorado river very high, and sudden rise.

*Lookout Mountain, Tenn.*—November 27.—Heavy fog. 29th, sleet from 11 to 12 p. m.; strong northwest wind, very cold.

*Chilesburg, Ky.*—November 3.—Large flocks of wild pigeons going westward. 23d.—Large flocks of wild pigeons going south. 23d, snow from 1 to 3 p. m., and again in the night, but altogether not enough to measure. This is the first snow this autumn, and it melted soon after falling. 24th.—Snowing from early in the morning until 3 p. m., but melted as it fell. 25th.—A thin covering of ice this morning upon shallow ponds, the first this season.

*Marion, Ohio.*—November 22.—Snow at 3 p. m., amounting to about half an inch.

*Bethel, Ohio.*—An eighth of an inch of snow fell on the 22d and 23d. 30th.—This has been a very wet autumn; corn remains in the field ungathered.

*Gallipolis, Ohio.*—The first killing frosts of the season were on the 6th and 7th.



*Kingston, Ohio.*—November 23.—Snow squall to day. 24th, ground white with snow.  
*Kelley's Island, Ohio.*—November 23.—Ice thickness of paper this morning; the first killing frost of the season.

*Toledo, Ohio.*—November 6.—Ground frozen the first time.

*Litchfield, Mich.*—November 22.—Four inches of very wet snow on the ground to-day, having fallen from 7 p. m. yesterday to 5 p. m. to-day. 27th.—Distant thunder in the southwest; snow mostly gone.

*Monroe, Mich.*—An eighth of an inch of snow fell on the 22d.

*Grand Rapids, Mich.*—Six inches and three-tenths of snow fell from 2 p. m. of the 21st to 10 a. m. of the 22d.

*Muncie, Indiana.*—Half an inch of snow on the 22d.

*Vevay, Indiana.*—An inch of snow on the 22d and 23d; the first snow of the season.

*Aurora, Illinois.*—November was very mild and pleasant. Farmers were able to plough nearly every day. The ground at the end of the month was frozen only about an inch. No wild geese have been flying south. There were two snows during the month, just enough to whiten the ground—one on the 21st, the other on the 29th.

*Winnebago, Illinois.*—Two and a half inches of snow from 1 p. m. of the 21st to 6 a. m. of the 22d.

*Dubuque, Illinois.*—November 16.—First flock of wild geese going south. 30.—No snow during the month.

*Golconda, Illinois.*—November 30.—No ducks or geese noticed migrating yet. There are generally plenty in the ponds and creeks this month.

*Mount Sterling, Illinois.*—November 30.—Ground slightly covered with snow this morning; the first snow of the season.

*Marengo, Illinois.*—The temperature of November was a little more than three degrees higher than the mean of twelve years, with about the same amount of rain as the average for the same period.

*Missouri.*—No snow is reported on any of the registers for November from Missouri.

*Delavan, Wisconsin.*—A little more than an inch of snow fell from 1 p. m. of the 21st to 7 a. m. of the 22d.

*Milwaukee, Wisconsin.*—November 21.—Snowed from 2 p. m. till in night, to depth of two inches.

*Plymouth, Wisconsin.*—Three inches of snow fell from 11½ a. m. of the 21st to 7½ a. m. of the 22d.

*Baraboo, Wisconsin.*—Six inches of snow on the 22d and 23d.

*Embarrass, Wisconsin.*—November 21.—Five inches of snow fell to-day.

*Beaver Bay, Minnesota.*—Eight and a half inches of snow fell on the 22d.

*St. Paul, Minnesota.*—November 21.—Snow from 8 a. m. to 4 p. m.; three inches.

*Minneapolis, Minnesota.*—November 21.—Snow from 8 a. m. to 4 p. m.; three inches.

*Iowa.*—The snow in Iowa on the 21st November was very slight at most of the stations; the deepest mentioned on the registers was three inches, at Ceres.

*Manchester, Iowa.*—November 30.—Small streams and ponds frozen over.

*Clinton, Iowa.*—November 19.—Last boat up the river. 21st, last boat down the river.

*Monticello, Iowa.*—November 15.—Large flocks of wild geese flying south.

*Des Moines, Iowa.*—The month of November was one of the mildest known in Iowa. Farmers have had a most delightful time for harvesting their corn and for autumn work.

*Iowa City, Iowa.*—November 29.—First snow of the season.

*Kansas.*—No snow recorded on any of the registers for November from Kansas.

*Glendale, Nebraska.*—November was a very pleasant month, with but one or two unpleasant days. Very little rain during the month, and no snow except very slight squalls on the 27th, not measurable, and the first of the season.

*Bellevue, Nebraska.*—No snow during the month. About the 13th or 14th it was reported there was fifteen inches of snow up the Platte, near the Forks, or about three hundred miles.

*Richland, Nebraska.*—The past month was the warmest November in eight years, except in 1865. The ground was fit to plough until the 26th, when the surface froze tightly for the first time this season.

*Great Salt Lake City, Utah.*—Half an inch of snow on the 6th and six inches on the 10th.

*Wanship, Utah.*—Snow fell on six days in November.

*Helena City, Montana.*—No snow during November, and only half an inch of rain, which fell on the 20th; the deepest was two inches on the 28th; it melted in the afternoon.

*Corvallis, Oregon.*—Rain on seventeen days in November; snow twice on Mt. St. Helens, on the 11th and 26th.

NOTE.—There was a decided rise of temperature near the end of the month throughout the whole of the United States east of the Rocky mountains. In Nebraska, Kansas, and Iowa it occurred on the 26th; thence east to Ohio on the 27th and 28th, and from Ohio to the Atlantic coast on the 29th; and at nearly all the stations from the western edge of Pennsylvania to New Brunswick the 29th was the warmest day of the month.



## DECEMBER, 1866.

The notes of the weather for December are principally occupied with the great storm of the 25th-28th, which resembled the storm of January 6, 1856. A snow-storm also prevailed on the 15th-17th, extending from the northeast coast to Nebraska and into the southern States. The principal fall of snow in the month, west of Ohio, was during this storm.

*Wolfville, Nova Scotia*.—Two and a half inches of snow fell during the night of the 27th.  
*Holifax, N. S.*—The Newfoundland telegraph lines were prostrated for many miles by the terrible gale of Wednesday, December 25. A fearful gale here on Thursday night threw down the telegraph lines and washed the railway embankments away. Several vessels were injured at the wharves. There have been no arrivals here now (December 29) for two days.—*Newspaper telegram*.

*St. Anne, Canada East*, (long.  $70^{\circ}$  on the south shore of the St. Lawrence.)—Slight snow beginning in the night of the 26th, and ending at  $11\frac{1}{2}$  a. m., the 27th. Heavy snow from 2 a. m. to 11 a. m. on the 28th. Snow fell in the night of the 28th to noon of the 29th; ten and a half inches in all.

*Montreal, Canada*.—December 29.—There has been a heavy snow-storm during the last two days, the wind blowing like a hurricane. The drifts are several feet high, and the trains are delayed. The river has not been as free from ice for twelve years as at present.—*Newspaper telegram*.

*Toronto, Canada*.—December 28.—The snow is three feet deep on a level west of Stratford.—*Newspaper telegram*.

*Cornish, Maine*.—Snow from 8 a. m. on the 27th to 7.20 a. m. the next day. The barometer on the morning of the 28th was lower than at any time before since the observer began recording it. Fall of snow, ten inches.

*Gardiner, Maine*.—December 27.—Snow-storm commenced about noon; snow moist, and towards night rain; cleared off at midnight. About six inches of snow and an inch and a quarter of rain. 28th.—Another storm of snow began at 6 a. m. and cleared off at 2 p. m., only about  $1\frac{1}{2}$  inch of snow. In looking over the records for more than twenty years, the observer found no instance of the barometer being lower than it was this morning. The mean temperature of the month was  $3.23^{\circ}$  above the average of December for thirty-one years. Had it not been for the cold of the last three days of the month the mean temperature would have been  $5\frac{1}{2}^{\circ}$  above the average.

*Standish, Maine*.—December 28.—Four and a half inches of snow fell yesterday and to-day. First sleighing this winter.

*Lisbon, Maine*.—The gale of the 27th and 28th was very severe here, uprooting and breaking off trees ten inches in diameter. Very good sleighing; the first of the season.

*Andrim, N. H.*—The fourth snow of the season was on the 27th, commencing about 7 a. m., continuing till after 9 p. m. The wind blew very furiously during the night, and continued to do so for several hours after sunrise on the 28th. This is thought to be the heaviest storm that has occurred for several years. Coming down damp, it adhered to the trees, bending their branches to the ground, so that many of them had to be cut away in order to clear the public road.

*Concord, N. H.*—December 27.—An easterly gale prevailed all day, accompanied by soft snow, which began to fall early in the morning, or during the night previous, and lasted till in the night of the 27th. It blew with the greatest vehemence about 2 p. m., when, also, the snow was the thickest. The sleighing has never been better.

*Claremont, N. H.*—On the night of the 27th and morning of the 28th the barometer was lower than for many years before. Twelve inches of snow fell.

*Lunenburg, Vermont*.—There is no sleighing at the close of the month, which is unusual. What snow there has been has blown in heaps, and more than half of the way the roads are bare. The ground is frozen quite hard, and ice on ponds and rivers is about ten inches thick.

*Wilmington, Vermont*.—Snow began to fall on the morning of the 27th. The storm continued all day and through the following night. It was an old-fashioned northeaster. During the 28th and 29th the wind blew violently from the west. The snow was thrown into drifts, and nearly all the highways were rendered impassable, and kept so for several days. Such a storm has not been known in this vicinity for more than twenty years. Snow fell to the depth of about twenty-five inches.

*Barnet, Vermont*.—About ten inches of snow fell during December; at the end of the month not more than two inches remained, not enough for sleighing, and there have been but a few days that sleighs have been used as yet this winter. The ponds and ground are frozen quite deep. During the storm on the 27th and 28th a foot and a half of snow fell fifty or sixty miles below, and only three inches here.

*Georgetown, Mass.*—The only fall of snow sufficient for measurement was that of the 16th and 17th. The severest rain storm of the month was on the 27th. Rain fell with scarcely any intermission till near night.

*Richmond, Mass.*—December 27.—A heavy snow commenced at 3 a. m., from the south-east. At 4 p. m. the wind changed to northwest, and the snow was driven furiously into drifts. The storm and blow continued until the 29th. Highways were universally blocked with snow, and railroad travel was suspended for two days.

*Kingston, Mass.*—December 27.—A furious storm of wind and rain. 28th.—Two inches of snow fell from 11 o'clock last night to 4 this morning.

*Newbury, Mass.*—December 27.—From 4 p. m. to 6½ p. m. the wind blew a violent gale.

*North Billerica, Mass.*—December 27.—A remarkable depression of the barometer, reaching its minimum during the night.

*Williamstown, Mass.*—December 27.—Great snow storm; depth of snow probably more than two feet, the greatest fall observed here at one time.

*Worcester, Mass.*—Eight inches of snow fell from 8 a. m. of the 27th to 4 a. m. of the 28th.

*Newport, R. I.*—December 27.—Rain from 7 a. m. to 2 p. m., and snow from 8 p. m. till two hours after midnight.

*Pomfret, Conn.*—December 27.—Snow from 6 a. m. till in the night.

*Groton, Conn.*—Very heavy rain on the 27th. Two inches of snow on the 28th, the wind blowing a strong gale much of the time during these two days.

*Columbia, Conn.*—December 27.—Commenced raining at 4 a. m. and continued, with the wind northeast, till the 28th at 3 a. m., when the wind veered into northwest. Twelve inches of snow fell.

*Colebrook, Conn.*—December 27.—Commenced snowing as early as 5 a. m.; wind east in the morning; at 4 p. m. changed to northwest, very high, which continued through the night. After the wind changed the air was so filled with snow that it was impossible to know when it stopped snowing. Two feet of snow fell during the storm. 28th.—High wind and snow squalls; snow very badly drifted; roads impassable.

*Hudson, N. Y.*—December 28.—The storm of last night was the most severe ever known in this city. Every avenue to the city is blocked. The Hudson and Berkshire railroad is completely closed. Four passenger cars on the Hudson River railroad were blown from the track last evening, and trees and fences in all directions, were blown down.—*Newspaper telegram.*

*Troy, N. Y.*—December 29.—The city is still snow-bound. No trains have reached us since Thursday afternoon, the 27th. Yesterday trains left the city by the Central road for Schenectady, and also by the Rensselaer and Saratoga road, but in each case they were compelled to return, after proceeding seven or eight miles. Communication by railroad is not yet open between this city and Albany.—*Newspaper telegram.*

*South Hartford, N. Y.*—December 27.—Snow commenced at 9 a. m.; at 2 p. m. it had not amounted to an inch. It then increased, and at 3 p. m. was falling at the rate of four inches per hour. At 2 a. m. on the 28th, it stopped storming. When morning broke, the snow lay twenty inches upon the level. Travel ceased, and was not resumed on the Saratoga and Washington railroad until the morning of the 30th.

*Nichols, N. Y.*—December 27.—Light snow all day; depth two inches; very windy night. 28th.—Snow squalls a greater part of the day; strong gale from the northwest all day and night.

*Garrison's, N. Y.*—A heavy gale, from the west and northwest, blew all through the 27th and 28th, and part of the 29th, but no serious damage was done in this vicinity.

*Depauville, N. Y.*—December 31.—Good sleighing on all roads running north and south; roads running east and west are in many places badly drifted. The ground is not frozen. The open country is covered with only a few inches of snow, while on other places high banks of snow are heaped up.

*New York, N. Y.*—December 27.—Snow at 2 a. m.; after a short time hail, and then sleet, till at 10 a. m. it became rain, and continued so till 11.40, when it changed to snow and continued at intervals till 5.40 p. m. At first the wind was very light from west southwest; changed gradually to the northwest, and increased in violence till at 6 p. m. it blew a gale, and continued most of the night. Amount of snow, two inches.

*Skaneateles, N. Y.*—December 27.—A most boisterous day, and snow drifted badly. 28th.—Tempestuous day; snowing and drifting fearfully. 29th.—The storm abates, but wind continues high; snow supposed to be three and a half feet deep on the level.

*Rochester, N. Y.*—December 27.—A very severe storm commenced last night, and this afternoon is attended by a westerly gale that is piling the snow in immense drifts through the county. The storm did not cease till early in the morning of the 29th, and seems to have been the greatest storm that has occurred in several years.—*Dr. Matthews.*

*Rochester, N. Y.*—The morning of the 21st was the coldest morning in December in thirty years, by four degrees. The temperature of the month was 2.71° below the general average for December. (In the meteorology of the State of New York, printed in 1847, the temperature of Rochester in December, 1847, is given 10° below, but should be 10 above, as the original records show.) Average temperature of the year, 1837 to 1866, inclusive, 47.03°; of water, 32.63 inches; of barometer, 29.53 inches.—*Prof. Dewey.*

*Newark, N. J.*—On the 27th about one inch of snow fell during the day, preceded by some rain and hail the night previous, and was succeeded by a gale of wind of some hours continuance from the west and northwest, causing the foundering of the steamboat Commodore on Long Island sound, and other marine disasters. The mean temperature of the month was nearly two degrees lower than the average of December for the last twenty-two years. The quantity of rain and melted snow was more than an inch less than the average.

*Greenwich, N. J.*—December 27.—Light rain last night, which changed to snow between 6 and 7 a. m. this morning. Squally through the day.

*Locust Farm, N. J.*—December 27, 28.—Quite a gale from the west. Delaware river frozen over for the third time this winter.

*Moorestown, N. J.*—The ground was without snow until the 31st, save a few hours on the 16th.  
*Reading, Penn.*—Strawberry plants in bloom in the beginning of the month, and fruit buds of trees very much pushed forward. Gale from the west from the evening of the 27th till towards daylight of the 29th, preceded by a light snow.

*Tioga, Penn.*—On the night of the 27th, all of the 28th, and a part of the 29th there was a high cold wind from the west.

*North Whitehall, Penn.*—December 27.—Three-and-a-half inches of snow; high wind in afternoon and night. This December was the coldest since the record began, eleven years.

*Poccpson, Penn.*—December 27.—Light fall of snow this morning.

*Pennsylvia, Penn.*—December 27.—Two inches of snow fell to-day.

*Fallsington, Penn.*—December 27.—Sprinkle of rain at 3 a. m. Snow squalls from 8 a. m. to 5 p. m.; gale.

*Philadelphia, Penn.*—December 27.—Rain last night, changing this morning to snow, ceasing at 10 a. m.; depth of snow one inch.

*Meadville, Penn.*—December 29.—It has been snowing here for the last forty-eight hours; it is two feet deep and still falling.—*Newspaper telegram.*

*Emmitsburg, Md.*—December 27.—A violent gale commenced at 9 a. m. and continued during the whole day and night and during the 28th, until 10 o'clock a. m., when it moderated a little, but during the afternoon and night considerable wind.

*Charleston, S. C.*—December 29.—Cold and rainy.—*Newspaper telegram.*

*Columbia, S. C.*—Snow began here on the 28th and fell to the depth of a foot, the deepest snow that any remember to have occurred here.—*Correspondence.*

*Augusta, Ga.*—December 29.—The snow here this evening is one inch deep.—*Newspaper telegram.*

*Atlanta, Ga.*—December 29.—Heavy snow here; good sleighing this evening.—*Newspaper telegram.*

*Natchez, Miss.*—December 26.—Thunder in the west at 3.30 p. m. Light shower of rain from 3.40 to 3.55 p. m., with a few peals of thunder. 27th.—Clear and cold day with a fresh breeze from the north.

*Helena, Ark.*—No snow recorded during the month, and no rain after the 14th.

*Lookout Mountain, Tenn.*—December 26.—Sleet this morning. First snow storm of the season; it continued only an hour or two.

*Chilseburg, Ky.*—December 26.—Began to snow before day, and it was an inch deep at daybreak, but all melted before evening. Began to rain and snow at 4 p. m.; mostly rain at first, but in a short time it was mostly snow; depth two inches.

*Ohio.*—Throughout Ohio there was a fall of snow on the 26th, varying from less than an inch in depth to four inches. The wind generally was west, and during the night of the 26th and throughout the 27th and 28th was a strong or high wind at some of the stations, at others only a gentle or fresh breeze.

*Michigan.*—At Holland snow fell every day from the 25th to the 31st, inclusive, amounting in all to eighteen and a half inches, with but little wind. Only a slight fall of snow is recorded at the other stations.

Further west the evidences of the storm of the 27th became very slight, and the remaining portion of these notes will not be confined to it as the previous part has been.

*Spiceland, Ind.*—December 26.—Showering nearly all day. Very stormy p. m.; exceedingly so after night.

*Perry, Ind.*—December 23.—10.45 a. m. violent thunder storm from the south; forked lightning of a dark red color; the rain fell in torrents; thermometer 60° at 11 a. m.; wind from the southwest.

*Merom, Ind.*—December 23.—At 7 a. m. the temperature was 52°, which was the highest at that hour during the month. Soon after 8 a. m. the wind changed from southwest to west. At 2 p. m. the temperature had fallen to 41°, and it continued to descend till it reached 6° at 7 a. m. on the 27th. Rain from 8 p. m. 22d till past noon the 3d.

*Aurora, Ill.*—December 31.—The ground is bare, with the exception of some spots of ice.  
*Andalusia, Ill.*—From the 4th to the 15th the ground was entirely free from frost. The Mississippi river at this place was not frozen over till December 27th in the main channel. The streams were frozen over two weeks before.

*Winnebago, Ill.*—December 26.—Light snow squalls at intervals through the day. Strong west wind in the afternoon and night.

*Loami, Ill.*—Only two inches of snow fell during the month, which was on the 15th.

*Riley, Ill.*—The temperature of December was about 23° below the mean of the month for eleven years, and the temperature of the year nearly 3° below the annual mean for the same period. The amount of rain and melted snow was about equal to the general average. During the great storm in the last week of the month further east, the weather here was steady, cold, and pleasant, with a fresh breeze from the northwest; on the night of the 26th the wind was high from the west. The ground and streams froze on the 9th and 10th, up to to which time there was good ploughing. No snow or rain after the 19th.

*Waterloo, Ill.*—December 15.—5 p. m. hail the size of a hazel-nut, and thunder and lightning as heavy as in summer.

*Ontario, Ill.*—December 16.—A hard snow storm, much drifted; depth about fifty-four and a half inches.



*Allenton, Mo.*—December 5.—Thunder from 10.40 to 11.20 a. m.; thunder and lightning from 1.50 p. m. to 2 p. m. 26th.—A sprinkling of snow at 9½ a. m.; high north wind in the night.

*Harrisonville, Mo.*—December 27.—Snow from 7¼ p. m. to 11 p. m.; three and a quarter inches.

*Milwaukee, Wis.*—December 16.—A furious northeast snow storm; depth of snow eleven inches.

*Minneapolis, Minn.*—December 5.—Skating on the river here. 8th.—Ferry-boat across the river at Fort Snelling made its last trip for the season.

*St. Paul, Minn.*—December 10.—Mississippi closed later by eight days than for 10 years; 31st, ground frozen to the depth of two and a half feet. The only falls of snow during the month deep enough to be measured were three-eighths of an inch on the 20th, and one inch on the 30th.

*New Ulm, Minn.*—Scarcely any snow fell during the month. On the 11th the Minnesota river froze over, so that teams could cross in safety; ground free of snow at the end of the month.

*Davenport, Iowa.*—Nine inches of snow during the month; six inches of which fell on the 15th and 16th.

*Dubuque, Iowa.*—December 14.—River closed with ice in gorges, leaving open space for ferry-boat to run. 26th.—Teams crossed the Mississippi on the ice for the first time this winter.

*Burlington, Iowa.*—December 10.—Heavy ice commenced running in the Mississippi at this place; 14th, river closed at 10 o'clock p. m. 16th.—Nine inches of snow fell from 3 p. m. yesterday to 9 a. m. to-day, the only snow of any consequence during the month.

*Ceres, Iowa.*—There was very little snow during the month; the ground is frozen three feet deep.

*Independence, Iowa.*—Only four and a half inches of snow fell during the month—three and a half of it on the 7th and 8th, the other inch on the 30th.

*Waterloo, Iowa.*—No snow of any amount during the month.

*Des Moines, Iowa.*—The only falls of snow during the month were two inches on the 7th, six inches on the 15th and 16th, and a few flakes on the 30th. At the close of the month the roads were dry and dusty like summer.

*Algona, Iowa.*—There were only two and a half inches of snow during the month, and the weather was remarkably dry and pleasant for the season.

*Monticello, Iowa.*—Two inches of snow on the 8th, four inches on the 15th, and half an inch on the 30th. The south fork of the Maquoketa river froze over at this place on the 13th, which was one day later than last year.

*Fort Madison, Iowa.*—Eight-tenths of an inch of snow fell on the 6th and 7th, nine inches and seven-tenths on the 15th and 16th, and five-tenths on the 30th; in all, eleven inches.

*Leavenworth, Kansas.*—There were nearly thirteen inches of snow during the month, nine and a half inches of it on the 15th. The mean temperature of the month was 1.7° colder than the average for five years, and the amount of rain and melted snow was 2.39 inches more than the average for the same period.

*Council Grove, Kansas.*—December 8.—A little snow, partially whitening the ground. 15th.—Snowing all day, partially whitening the ground. 22d.—Snow gone. 26th.—Squall of snow at 7 a. m., not enough to whiten the ground. 29th.—One inch of snow this morning.

*Atchison, Kansas.*—December 2.—Floating ice in the Missouri river all day, being the first this season. Diffuse lightning in the E. S. E. and E. during the evening. 9th.—White Clay creek frozen solid this morning. 15th.—The Missouri river closed opposite this city last night and footmen are crossing on the ice to-day. A little over ten inches of snow fell to-day, and more than fourteen inches during the month.

*Manhattan, Kansas.*—Nine inches of snow fell on the 15th, and less than a quarter of an inch during the rest of the month.

*Bellvue, Nebraska.*—December 10.—River closed. One boat was up about the first of the month, the first time they have run so late in the season.

*Elkhorn City, Nebraska.*—Two and a half inches of snow fell during the month. The temperature of the month was considerably above the mean of nine years. The ground was last fit to plough on the 7th, since which time it remained frozen.

*Glendale, Nebraska.*—December 1.—Platte and Missouri rivers closed. 7th.—First real snow; depth, three and a half inches. 12th.—Ferry-boat crossing the Missouri again. 15th, 16th.—Four inches and three-quarters of snow. 25th, snow mostly gone except in large drifts. 27th.—From twenty minutes before to thirty minutes after sunrise, extraordinary deep and brilliant colors and tints of clouds in the east—deep red, scarlet, and pink, and sky a deep pea-green tinged with blue. 31st.—Amount of snow during the month eight inches and six-tenths.

*San Francisco, California.*—December 29.—A terrible storm, lasting about three hours, passed over Nevada on the 27th instant. Rain and hail poured down alternately, accompanied with thunder and lightning, flooding the streets and stores. Fences were levelled to the ground, and large oaks and pines snapped off as though they were pipe-stems.—*News-paper telegram.*





